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THE UNIVERSITY OF ALBERTA

INSTRUCTIONAL VARIABLES AS THEY RELATE TO LANGUAGE LABORATORY USE

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Instructional Variables as They Relate to Language Laboratory Use," submitted by Bozena M. Shanahan in partial fulfilment of the requirements for the degree of Master of Education.

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ABSTRACT

The purposes of the present study were to determine whether or not there exists a relationship between the attitude of teachers toward the language laboratory, their professional preparation in its use, and the manner in which they use it. In addition, it was hoped that the study would reveal the nature of future pre-service and in-service programs in language laboratory techniques.

The questionnaire used to obtain this information consisted of five parts which dealt with: the actual teaching situation of the teacher; the teacher's professional preparation and experience; the teacher's attitude toward the language laboratory as measured by the semantic differential scale; the manner and frequency of laboratory use, and general instructionally related information regarding laboratory use. Here teachers were also asked to indicate in-service topics of interest to them, and to make further suggestions with respect to the use of the language laboratory.

Thirty-seven schools in 17 school districts and divisions were involved. From the 109 teachers qualifying for the survey, 91 completed questionnaires were obtained.

On the basis of their ratings on the semantic differential scale, the teachers were divided into high, mid, and low attitude groups which reflected their orientation toward the language laboratory.

With the exception of the type of in-service training in audio-visual methods and materials that the positive or high attitude teachers had completed, no relationship was found to exist between attitude and

professional preparation, between attitude and language laboratory use, and between professional preparation and language laboratory use. Teachers tended to use the language laboratory primarily for practising with the materials presented in class and for testing. In addition, the teachers did use the language laboratory, the majority of them regularly.

The problems which teachers most frequently experienced in the language laboratory were: lack of time to prepare their own materials; lack of strategies for the effective preparation of aural-oral tests; lack of time to complete course objectives, and maintenance of class interest in laboratory practice. Poor maintenance of the equipment was perceived to be a problem although the language laboratories in this study were rarely out of order.

In spite of the problems which teachers had experienced, they still felt that continued use of the language laboratory was justified, and that it helped students to learn French. Both pre-service and in-service training in language laboratory techniques were considered necessary. As topics for in-service, the teachers indicated particular interest in testing approaches, the preparation of laboratory materials, the technical and basic maintenance of the equipment, and the use of the language laboratory for individualized instruction.

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Chapter I

BACKGROUND TO THE PROBLEM

Introduction

A controversy surrounding the use of the language laboratory in second language teaching has continued for well over a decade (Ackerman, 1966; Hocking, 1966; Jarlett, 1971; Scravinicky, 1976). Because of the great variety of language laboratory installations and the diverse manner in which they are used, attempts to evaluate their effectiveness have yielded contradictory results, many of them negative. Both the Keating Report (1963) and the Pennsylvania Study by Smith (1970) reported that the language laboratory generally proved ineffective in contributing to the students' achievement in their listening, speaking, and reading skills. In a study carried out in the province of Alberta, Touchette (1969) reported that the non-laboratory students scored higher on the 1966 audio-comprehension examination in French 30 than did the laboratory students. However, the differences between the group means were not statistically significant and his research design was open to question.

The results of these and similar studies are disconcerting as tens of thousands of dollars have already been spent on language laboratory installations in the secondary schools of Alberta. Most of these studies have concentrated on pupil performance, assuming as Ackerman (1966:5) suggests they appear to do, "that all teachers have similar attitudes toward the use of the laboratory and equal preparation both in its use and in foreign language instruction in general." Many of

the studies have assumed that because there is a language laboratory in the school, it was being used as part of the program.

Since none of the investigators in the studies cited previously sought to determine the attitudes of the teachers toward the language laboratory, their professional preparation in its use, the manner in which they actually used it, or their expectations of it, it is difficult to interpret the research findings with any degree of accuracy. Yet these same teacher factors are the very aspects which educators such as Ackerman (1966), Hocking (1966), Smith and Littlefield (1969), and Jarlett (1971) feel are so highly essential in any effective use of the language laboratory.

Need for the Study

A great deal of money has been spent on language laboratory installations in Alberta high schools. Their contribution to second language instruction in this province is unknown at the present time. The present study, by assessing the actual use of the language laboratory and the attitudes of teachers involved in its operation, attempts to meet this problem.

Given the monetary investment in language laboratory installations and that the only existing report with respect to the language laboratory in Alberta did not assess teacher attitude, professional preparation in laboratory use, or actual laboratory use, this study hopes to clarify these aspects of the problem. In addition, this study may provide teacher training institutions and school districts and divisions with some direction for pre-service and in-service training in language laboratory methods and materials.

Statement of the Problem

The problem to be studied is whether teacher attitudes toward the language laboratory and their professional preparation in its use affect the actual implementation of the language laboratory in Alberta high school French programs.

Purpose of the Study

The purpose of this study is fourfold:

1) to determine if there exists a relationship between the attitudes of teachers toward the language laboratory and their professional preparation in its use;

2) to determine if there exists a relationship between the attitudes of teachers toward the language laboratory and the manner in which they use it;

3) to determine if there exists a relationship between the professional preparation of teachers in the use of the language laboratory and the manner in which they use it, and

4) to determine the nature of future pre-service and in-service programs in language laboratory techniques.

Assumptions

For the purpose of this study, it is assumed that:

1. The teachers who responded to the questionnaire are in fact using the language laboratory to a degree which allows their assessment to be accurate.

2. The responses of the teachers in this study reflect the views of the total population approached.

3. Teachers understand that this survey is not an evaluation of the teachers who use the language laboratory, but an attempt to gather information about the factors related to language laboratory use.

4. Teachers will reply according to their teaching situation for the whole school year.

Design of the Study

The sample consisted of 91 high school teachers of French in selected Alberta school districts and divisions which had high schools with audio-active-compare language laboratory installations.

The teachers responded to a questionnaire consisting of five parts. These were: a) actual teaching situation; b) professional preparation and experience; c) the semantic differential attitude scale; d) manner of language laboratory use, and e) general information and suggestions for in-service.

The semantic differential scale is frequently used to assess the differences between people in the connotative meaning (as opposed to the denotative or dictionary definition meaning) which they ascribe to a given symbol, word, or concept (Osgood, 1969:133). Second language teachers generally agree on what a language laboratory is, but how they react to it in terms of their attitudes or feelings is another matter.

The semantic differential instrument was considered appropriate to this study because its approach to attitude assessment represents a subtle way of approaching generalized affect. It was felt that use of

more conventional rating scales or questionnaires to elicit teacher attitude would reveal to the respondent the intent of the questions, thus introducing the possibility of response bias. The semantic differential yields a strong evaluative factor, a result desirable in view of the purposes of this study in that comparisons between high and low attitude teachers in their instructional approaches were sought. In addition, the semantic differential technique is considered to be of acceptable reliability and is relatively easy to administer and to score.

On the basis of their total scores on the semantic differential scale, the teachers were grouped into high, mid, and low attitude groups. The following statistical procedures were used: factor analysis on the semantic differential scale; a one-way analysis of variance on the total scores of the semantic differential scale; Chi-square for selected variables, and the Fisher z for independent proportions on selected questionnaire items.

For the descriptive data on the questionnaire, the frequencies and percentages of responses were tabulated by the investigator. Suggestions regarding in-service and general comments regarding language laboratory use were summarized and categorized.

Definition of Terms

For the purposes of this study, the following definitions apply:
attitude - a variety of definitions of attitude may be found in the literature. However, for the purposes of this study, Osgood's view of attitude as a learned evaluation, varying in both direction and intensity toward some subject or concept, will be used (Osgood, Suci, and

Tannenbaum, 1957:190). Attitude is defined operationally as the individual's scores on the semantic differential scale developed for this study.

language laboratory - an electronic installation in which a student, within the privacy of a booth, is able to listen and respond to a master recording with little outside interference, and with only the teacher being able to monitor his responses.

audio-active-compare language laboratory - sometimes referred to as a record-playback laboratory, it has a tape recorder at each booth position or in a remote automatically operated position, enabling the student to hear the drills, record his own responses, stop and compare these responses with the master recording.

teacher attitude toward the language laboratory - the predisposition of individual teachers to evaluate the laboratory in a favorable or unfavorable manner.

high attitude teacher - one whose score on the semantic differential scale used in this study is 49 or less.

mid attitude teacher - one whose score on the semantic differential scale used in this study is 50 to 59.

low attitude teacher - one whose score on the semantic differential scale used in this study is 60 or more.

professional preparation - includes years of training, number of French language and literature courses, curriculum and instruction courses in second language teaching, type of training completed in language laboratory and audio-visual methods and materials.

teachers of French - those teachers teaching any French course(s) approved for use in Alberta high schools by the Alberta Department of Education, including those who may teach other high school courses.

urban schools - those schools located in Alberta cities; that is, centres of population numbering 10,000 or more.

rural schools - those schools located in Alberta towns; that is, centres of population numbering less than 10,000.

Delimitations

The following delimitations have been imposed on this study:

1. Only selected Alberta school districts and divisions which had high schools with audio-active-compare language laboratory installations were involved.

2. Only those teachers teaching French courses during the 1971-72 school year were involved. Those teachers involved in the teaching of languages other than French that year were not included unless French was one of the languages they taught.

3. The study involved only those high school French courses offered in these schools during the 1971-72 school year.

Limitations

The following limitations are acknowledged:

1. The semantic differential attitude scale called for value judgements on the part of the respondents. A number noted that they found difficulty in completing the scale as some of the adjective pairs did not appear to be related to their attitude toward the language laboratory.

2. A number of respondents failed to complete parts of the questionnaire resulting in incomplete data which placed a further limitation on the conclusions drawn by the investigator.

3. Since the teachers of French in this study could also be teachers of other second languages, their responses on the questionnaire could have been affected by their language laboratory experience in those language classes.

4. The views toward the language laboratory are those of only the teachers responding to the questionnaire and should therefore be applied to all language laboratory teachers with care.

Hypotheses

The following null hypotheses are tested. It is hypothesized that:

There is no significant relationship between teacher attitude toward the language laboratory and

1.1 *the number of years of training completed beyond high school*

1.2 *the number of years of experience in teaching French*

1.2 *the number of years of access to a language laboratory as a teacher*

1.4 *the number of French language and/or literature courses completed at the university level*

1.5 *the number of curriculum and instruction courses completed in second language teaching*

1.6 *the type of training completed in language laboratory methods and materials*

1.7 *the type of training completed in audio-visual methods and materials.*

Overview of the Study

The first chapter introduced the problem, provided a rationale for the need for the study, and defined its scope. The second chapter presents a review of the related literature. The third chapter presents the design of the study. The fourth chapter presents the analyses of the data and the interpretation of their results. The fifth and final chapter presents the summary, implications, and recommendations of the study.

Chapter II

REVIEW OF THE RELATED LITERATURE

The Language Laboratory

The language laboratory is "an installation of electromechanical equipment which provides the student with the opportunity to practise the audio-lingual aspects of language learning" (Crosbie, 1965:1). There exists a variety of language laboratory installations, the simplest consisting of a headset for each individual student, connected to a tape recorder or other audio source, and the most complex containing a headset, microphone, and complete recording and playback facilities for each individual student. Regardless of the type of installation it is, the language laboratory is an aid, and not the central component of teaching.

Ladu (1963:10) compares the language laboratory to the science laboratory where students are given an opportunity to practise what they have learned in the classroom. It, like the record player or film projector, is another teaching tool and no more.

Hutchinson (1961:9) writes that the greatest contribution of the language laboratory is made as an integral part of a program in which the audio-lingual instruction forms the basis for the development of all the language skills; that is, listening, speaking, reading, and writing. The language laboratory strengthens foreign language instruction in a number of ways. It increases student participation in listening and speaking, makes available to the students a greater number and variety of native speakers, relieves the teacher from the tedium of drilling,

thereby giving him more time to help individual students who are having problems. It provides privacy, less distraction, and greater opportunity for concentration, and helps those teachers who may be deficient in audio-lingual training. However, Hutchinson does warn that the language laboratory weakens foreign language instruction when it is expected to do more than help to develop and maintain listening and speaking skills, when the teacher must develop language laboratory programs, when it is used for enrichment, and when it interferes with the relationship between the teacher and his students.

Effective use of the language laboratory exposes the students to lengthy doses of the target language. Sollohub (1977), in discussing some of the basic notions of language laboratory teaching, writes that the massive exposure to the language is very beneficial in itself. The ear becomes trained in sound patterns, accent and intonation are improved, and one's command of the vocabulary is extended and consolidated.

The Teacher and the Language Laboratory

It is generally agreed that several factors contribute to the successful operation of the language laboratory. These include the amount of class time regularly devoted to laboratory practice, the type of equipment used, the types of learning materials used, and the attitude, enthusiasm, and skill of the teacher as a critic, model, and guide trained to use the language laboratory as an aid in second language teaching (Bergens, 1971; Crosbie, 1965; Jarlett, 1971; Lorge, 1964; Rubrecht, 1977; Strasheim, 1966; Turner, 1964).

Crosbie (1965:2) maintains that the language laboratory requires better prepared teachers who, as well as conducting a class, must be able to put the equipment to good use. When used properly, the language laboratory can greatly increase the effectiveness of a good teacher, whether or not that teacher is a native speaker of the target language. It is not the equipment, but the materials and the manner in which they are used that is the key to foreign language instruction and learning. In this, Ladu (1966:10) agrees with Crosbie. According to her, the language laboratory is only as effective as the teacher makes it. The teacher must choose the right materials for the right time, schedule student practice sessions systematically, and work with individual students. Bergens (1971), too, believes that the choice of the right materials is a key to success. The teacher must decide which goals he wishes to achieve, then choose the materials accordingly.

In a similar vein, Turner (1964:1) states that the teacher is the "critical factor" in the correlation of the language laboratory and the classroom. He writes:

> Unless he [the teacher] . . . . is emotionally as well as intellectually aware of the unique contributions to language learning which can be offered by the language laboratory, broken equipment will not be repaired, voluntary attendance will dwindle and student attitude will provide an accurate mirror of the indifference or hostility towards the laboratory which is sensed in the classroom.

Turner further states that the teacher makes a positive contribution to language laboratory practice by selecting appropriate materials, carefully scheduling laboratory periods, programming materials to be presented both in class and the laboratory, careful monitoring, and using the laboratory for testing.

Hutchinson (1964:14-15) reinforces the statements concerning the importance of the teacher by writing that no innovations show themselves to be as important as the teacher who is a perceptive observer of his students. The contribution which the teacher makes in reinforcing the students' self-correction and practice is indispensable. As a result, Hutchinson stresses the importance of the preparation of teachers in language laboratory use. The teachers must be interested in getting the most out of the equipment and the materials, and they must have some skill in the effective use of these aids in order to help students develop listening and speaking skills. A good teacher, he believes, can make up for any deficiencies in the materials.

According to Rubrecht (1977), the language laboratory must be an integral part of the curriculum, and it must have meaningful and varied materials used in it. Close supervision and individual guidance on the part of the teachers are essential in keeping the students motivated to work in the language laboratory.

Although it is an aid to teaching, the language laboratory does not lessen the work load of the teacher, for as Hilton (1964:127) points out, "imagination, resourcefulness and spontaneity are in greater demand in the laboratory than elsewhere." Barcelona (1963:3), too, states that the language laboratory presents a challenge to the creative and imaginative teacher for it is only as valuable as the materials that go through it. In her survey of 130 second language teachers using the language laboratory for at least four years prior to her study, Barcelona found that the needs of these teachers were to understand the value and limitations of the laboratory, the ability to use it, and a general knowledge

of technological advances. The language laboratory, she concludes, needs competent teachers who are ready by attitude and training to use any electromechanical equipment as a teaching aid. It is not enough to have teachers accept and understand its operation. They must be able to see the educational opportunities the equipment offers and be willing to take advantage of them with skill and imagination.

Strasheim (1968:17) finds that teachers who use the language laboratory successfully tend to be well-informed in all ideas relating to second language teaching; that is, culture, literature, linguistics, and so forth. These teachers are usually more innovative in the laboratory. Strasheim states that these teachers believe the following about the language laboratory:

> The amount of speaking practice is greatly increased.
> Recording and comparing responses assists students in eliminating errors and fixing language patterns.
> Students gain a high degree of self-confidence through laboratory practice.
> Students may proceed at their own rate.
> The teacher is free to work directly with each student.

The teacher must know the capabilities of the equipment. Strasheim (1968:4) writes, ". . . . like any tool or instrument, the language laboratory is most useful in the hands of a craftsman who knows how to use it skilfully."

Although the language laboratory, when used properly, can greatly assist the second language teacher in his teaching, a good many teachers have doubts as to its value. Hocking (1966:8) writes of a "rather general disenchantment" with the language laboratory. He maintains that this is because audio-lingual instruction is being subjected to a counter-revolution, one aspect of which is a reaction against the language laboratory. A number of reasons are given: exaggerated claims

and expectations for the laboratory, poor equipment, inadequate maintenance, poor materials, the teachers' opposition to it, their lack of time, and most important of all, their lack of training in laboratory techniques. Both the equipment and the materials have continued to improve, but teachers still find they lack the time and knowledge to use the language laboratory effectively.

A number of problems in addition to lack of teacher skill and training in language laboratory use do continue to exist. These include the operational maintenance of the laboratory, the lack of personnel assigned to it, its use as both classroom and laboratory, and its proximity to the classroom. In a recent report on the language laboratory, Rubrecht (1977:2) lists three further problems or complaints. These are the physical layout of the laboratory itself, the very high teacher-pupil ratio in the laboratory, and the irrelevance of laboratory materials to classroom work. Perhaps it is still as was found by Scherer (1965:335) that if language laboratories do not meet the expectations of their users, it is largely because of a misunderstanding of their use. Sawyer (1971:9) feels that the variety of functions that the language laboratory holds has not been exploited or fully developed. Too much effort has been put into one or two functions.

The solution to improving instruction with the aid of the language laboratory lies in more intensive pre-service and in-service training of teachers in laboratory techniques. In providing such training, Hocking and Blickenstaff (1965:393) suggest that two objective be kept in mind. The teachers must understand the functions and potential value of the language laboratory, and they must be able to maintain it. As

Strasheim (1968:4) writes, ". . . it is the teacher who has had some kind of formal training beyond just familiarization with the equipment who finds the language laboratory an asset to his teaching."

The Effectiveness of the Language Laboratory

There exists a good deal of research on language laboratory effectiveness. This effectiveness has usually been measured by the achievement of students who used the language laboratory in second language instruction. Unfortunately, much of this research has been inadequately controlled and the findings have frequently been deceptive.

Keating (1963) tested more than 5000 students in 21 New York City area school districts for the language skills of reading comprehension and speech production. He found that only in speech production did the laboratory students out-perform the non-laboratory students. However, much criticism has been levelled at this study. Stack (1964) is critical because Dr. Keating made no attempt at standardization of the equipment or the materials used. The study says nothing about what was actually done in the language laboratories. Grittner (1964:210) writes that the study measures "failure to use the laboratory rather than the use of it," and that this in itself is enough to discredit the whole report. Ackerman (1966) and Porter and Porter (1964) question the instruments used to test the students' language skills.

Yet in spite of these findings, a number of educators still find the results encouraging. Stack (1964:193) believes that the language laboratory is doing precisely what is expected of it. He writes, ". . . the language laboratory is most effective in the beginning

courses in teaching and speaking skills. Students that use it are superior to those that do not in this regard."

The Pennsylvania Study, a large-scale experiment undertaken by Smith (1968), sought to evaluate the relative effectiveness of three modern second language teaching methods and three language laboratory systems. No significant differences were found between the traditional and fundamental skills treatment students, except that the traditional group surpassed the functional skills group in reading ability, and that the functional skills group scored better on a test of oral mimicry. The study concluded that a language laboratory of any type, used twice weekly, had no noticeable effect on achievement. Valette (1969:400) writes that the failure of the project to demonstrate significant differences among the three strategies does not necessarily support the hypothesis that such differences do not exist. She questions the appropriateness of the measurement instruments used, which she feels were too difficult when administered after one year of language study. In addition, no individualized instruction in the language laboratory was used. Valette says that it is not surprising, then, that the differences between the laboratory strategies and the tape recorder in the classroom technique were not significant.

Touchette (1969) investigated the contribution of the language laboratory to French language instruction in 37 Alberta high schools. Using the June, 1966, French 30 Departmental Examination for audio-comprehension and writing skills, he found that the non-laboratory group scored higher on the audio-comprehension examination than either of the laboratory groups. The differences between the means were not

statistically significant, however. On the writing skills examination, the non-laboratory students had the highest mean score. No effort, however, was made to determine teacher preparation in language laboratory use, how the language laboratory was used, or in fact whether it actually was used. As this study was carried out in 1967, it would have been interesting to note the length of time schools involved in the study had had their language laboratory installations, and whether the French 30 students had used the laboratory in their beginning French courses.

The results of two studies carried out in New York City high schools by Lorge (1964) are more encouraging. Her first study, comparing laboratory students with a non-laboratory control group, showed that beginning students using the laboratory were significantly better in overall speech production than the non-laboratory students. Students at higher levels of instruction showed little or no significant difference between the laboratory and control groups. The important conclusion here is that laboratory students gain as much traditional skill as those students in standard classes with the added ability in speaking skills. Lorge's second study, comparing types of language laboratories used, showed that students using record-playback equipment daily made the greatest gains in achievement.

Ackerman (1966), investigating language laboratory instruction in Florida and the achievement of first year students of Spanish, found that only in the listening skill was there a significant difference in achievement for laboratory students. He did indicate that professional preparation and the experience of the teacher is a significant factor in all language skills for both groups.

Concerning the teacher and the language laboratory, Lorge (1964) also reported that the prime factors in the effectiveness of laboratory work and the attitudes of the students toward it were the teachers' attitudes toward language laboratory sessions, their development of new techniques, and their ease in handling the equipment. Similarly, Hocking (1968), in an investigation of the use of the language laboratory and its evaluation by students, teachers, and the supervisor in a large suburban school district, discovered that the students' evaluation of the language laboratory revealed the strengths and weaknesses of their teachers. The students' reasons for liking the language laboratory reflected the teachers' understanding and proper use of the laboratory, while the reasons for disliking the language laboratory reflected the teachers' lack of understanding of the laboratory, their unfamiliarity with good laboratory techniques, and their failure to familiarize the students with the material before using it. In addition, department chairmen and supervisors, after visiting many of the classroom and language laboratory sessions, found that if the teachers did not like the language laboratory, this attitude was reflected in the students' attitude toward it. The teachers who received the highest rating were those who handled the equipment well and who saw the value of using the laboratory as an instructional device rather than as a substitute for classroom instruction.

Smith and Littlefield (1969), while investigating the relative achievement of three groups of secondary school students' beginning instruction in French, German, and Spanish, also sought information regarding the role which interests and attitudes play in second language

learning. They reported that beyond the students' interest and motivation, or attitude orientation, the teachers' attitudes toward the concept of tape-use and media in second language learning, and skill in the application of the materials to the facilities, contribute to the successful operation of the language laboratory.

A small scale study of teacher attitude toward language laboratory equipment and materials carried out by Smith and Woerdehoff (1970) found a positive orientation toward language laboratory learning. Teachers judged language laboratory practice tapes to be valuable and the laboratory equipment to be generally good. However, when the electronic classroom (an in-class facility) and the conventional laboratory were compared, the electronic classroom was preferred, although it was actually used less frequently than the language laboratory. The investigators concluded that although the ratings were somewhat positive, the teachers did not reflect strongly positive or negative attitudes toward the media they used in their classes. In addition, attitude toward media was not related to the teachers' use of the equipment or the tapes.

Although the effects of attitude toward media were found to be negligible in this study, Smith *et al.* (1970:35) write:

> . . . one must conclude that teacher attitudes still remain as potential contributing factors to error variance in educational research. No matter what variables between treatment conditions one measures, it is important to be able to estimate the effects of attitude where human factors are involved.

Chapter III

DESIGN OF THE STUDY

The first chapter introduced the problem and provided a rationale for the need for this kind of study. The second chapter presented a review of the literature and research related to the problem. The third chapter includes a description of the population, the sample, the questionnaire, the validity, reliability, and stability of the instrument, the procedure used for collecting the data, the tabulation of the data, and the statistical analyses used to treat the data.

The Population

The population for the study consists of teachers of French in selected school districts and divisions having a school or schools with audio-active-compare language laboratory installations.

The Sample

The sample consisted of 17 rural and 78 urban teachers teaching French during the 1971-72 school year. Four large urban school districts were selected and their supervisors of modern languages were telephoned to determine which schools had audio-active-compare language laboratory installations. The superintendents of 16 rural and urban Alberta school divisions and districts were contacted by mail or telephoned to determine if their high schools had this type of laboratory installation. Of the 20 selected school districts, three did not have this type of laboratory installation in their schools.

The number of schools having these installations was 37, of which 13 were rural and 24 were urban. Every school was represented in the returns.

Table 1 presents the number of teachers approached in each school, and the number of teachers who responded. Of the 89 urban teachers approached, 78 (87.6%) responded. Of the 20 rural teachers approached, 17 (85%) responded. Four teachers, all of them urban, had to be eliminated because they had not completed the semantic differential, thereby reducing the number of urban teachers to 74 (83.1%) of the total urban teachers approached.

The Questionnaire

The investigator's main concern in designing the questionnaire was to gather as much data as possible without taking a great deal of the teachers' time. The questionnaire (see Appendix B) consists of five parts where, with the exception of Part I, responses can be checked.

Part I consists of seven items dealing with the actual teaching situation.

Part II consists of eight items dealing with years of teacher training, experience and access to a language laboratory, the number of French language and/or literature courses completed, the number of curriculum and instruction courses completed in second language teaching, the type of training, if any, completed in language laboratory and in audio-visual methods and materials, as well as participation in other activities which may have improved the teachers' knowledge of the French language and/or methodology.

TABLE 1. The Number of Teachers Responding from Each School

School	Urban Schools (n = 24)		Rural Schools (n = 13)		
	Number Responding	Number Approached	Number Responding	Number Approached	
1	6	6	1	1	
2	4	5	1	2	
3	6	7	1	1	
4	3	4	2	2	
5	3	3	1	1	
6	4	4	1	2	
7	5	5	1	1	
8	3	3	1	1	
9	5	5	2	2	
10	2	2	2	2	
11	5	5	1	1	
12	5	5	1	1	
13	2	2	2	3	
14	3	5			
15	2	2			
16	1	3			
17	2	3			
18	2	2			
19	2	2			
20	2	4			
21	2	3			
22	3	3			
23	2	2			
24	4	4			
Total:	78	87.6%	89	17	85.0% 20
Eliminated:	4	4.5			
	74	83.1%			

Part III consists of the semantic differential scale to determine the teachers' attitude toward the language laboratory.

Part IV consists of eleven items dealing with language laboratory use and techniques; the objectives in teaching French; the frequency and actual amount of laboratory use; the proportion of time used for student recording; the proportion of time the laboratory is inoperable; the proportion of time teachers devote to preparation of laboratory materials; where these materials are obtained; the helpfulness of the laboratory in developing language skills, and the problems experienced in its use.

Part V, consisting of eight items, seeks general information about the language laboratory — how it affects the teachers' instruction and their work load as well as the students' learning of French; whether the teachers have laboratory aides in their schools; whether the continued use of the laboratory is justified, and whether pre-service and in-service education in its methods is vital. Space is provided for teachers to indicate the topics they would like to see discussed at in-service sessions, workshops, and institutes, and to make further comments and suggestions regarding the use of the language laboratory.

Validity of the Questionnaire

The content validity of the questionnaire was established by consulting four professional educators involved with the teaching of French and with language laboratory instruction. The judges were two associate professors of the Faculty of Education at the University of Alberta, the Director of Language Laboratories at the University of Alberta, and the Supervisor of Modern Languages for the Edmonton Public School Board.

The preliminary draft of the questionnaire was presented to the judges who were asked if the individual items dealt with issues of concern to French teachers who had access to a language laboratory. They were also asked to make suggestions regarding the complexity and the clarity of individual items on the questionnaire.

The primary concern expressed by the judges was with the length of the questionnaire. However, it was felt by all the judges that since all the items on the questionnaire were of importance to the study, the questionnaire should retain all the items in the preliminary draft. A suggestion made and incorporated into the final draft of the questionnaire was the addition of the words "as a teacher" to question 3 of Part II.

Copies of the questionnaire were sent to the modern language consultants or supervisors of the large urban districts, and to the superintendents of the small urban and rural school divisions for their approval. All but one of the districts and divisions approved the questionnaire. The recommendation made was that both *Ecouter et Parler* and *Chez les Français* be treated as part of one course; that is, the Audio-Lingual Series or the Holt Rinehart Series. This recommendation was carried out by the investigator.

Reliability of the Semantic Differential

The semantic differential technique has been established as a means of assessing how people feel toward various concepts. It allows one to compare differences in attitude between groups and differences in attitude across time yielding similar values or scores when the conditions are duplicated.

Osgood (1969:136) writes that test-retest studies have yielded an average reliability coefficient of 0.80. His first factor-analytic study as described in Osgood *et al.* (1957:126-127) involved 100 college students who rated 20 concepts such as mother, fraud, tornado, symphony, America, and feather on 50 descriptive scales, thereby generating a 1000-item test form. In order to ascertain the reliability of the scales, 40 items were chosen at random from the original 1000 items and repeated at the end of the test. A reliability coefficient of 0.85 was produced.

The semantic differential technique has been used to study the attitudes of both teachers and students toward instructional media in second language learning (Smith and Littlefield, 1969; Smith and Woerdehoff, 1970). Unfortunately, reliability coefficients were not reported for these studies. As the reliability of the semantic differential technique had shown itself to be sufficiently high, it was decided for purposes of the present study it would be administered once only. With a mail survey where teachers were assured of their anonymity, a second administration would have been very difficult.

Further discussion dealing with the semantic differential will be presented in the following chapter.

Stability of the Questionnaire

Since this study is descriptive and much of the information is procedural in nature, the lack of a test of stability — such as administering it twice — was not deemed necessary. Basically, this is a status study. A particular setting at a particular time is described. No generalizations are made about any other setting.

The descriptive part of the questionnaire itself asks questions bearing a similarity to one another in several instances. Teachers are asked how they use the language laboratory, what techniques of teaching they use in it, and what their objectives are in teaching French. A later question asks the teachers to indicate how helpful the language laboratory is in developing particular language skills. Teachers are also asked to indicate how frequently the laboratory is inoperable, how much preparation time they devote to laboratory materials, and where they get the materials they use. A list of problems experienced in the language laboratory appears in a later question. These problems include language laboratory maintenance and the preparation of laboratory materials.

Collecting the Data

For the collection of the data, the investigator mailed the questionnaires to high schools outside of the city of Edmonton, and distributed them in person to those Edmonton high schools involved in the study, picking them up one week later.

From the 109 teachers in the 37 schools, 95 (87.2%) of the questionnaires were returned. Of the 96 questionnaires, 4 (4.2%) had the semantic differential left blank. As a result these 4 questionnaires could not be used, reducing the total population participating in the study to 91 (83%) of all those teachers approached.

Tabulation of the Data

Upon completion of the data collection, the questionnaires were assigned identification numbers. The semantic differential scale scores

were transferred to IBM cards and the total scores for each subject were calculated by computer.

Numerical values were assigned for individual questions of Parts II, IV, and V of the questionnaire. The frequencies of responses to the various categories were calculated by the investigator and put into table form. New cards were generated by computer in order to record the frequency of responses for key questions (Part II, questions 1 to 7 inclusive) in preparation for specific statistical treatment.

Statistical Treatment of the Data

The 21 adjective pairs on the semantic differential were separated by rating scales numbered 1 (most favorable) through 7 (least favorable). Total scores for the scale were generated. Teachers with scores of 50 to 59 which fell into the most frequent category were designated the mid attitude group, those with scores of 49 or less were designated the high attitude group, and those with scores of 60 or more were designated the low attitude group. The above cut-off points were chosen because they divided the total group into three approximately equal groups.

The 21 items were factor-analyzed to generate the primary factors. A one-way analysis of variance was carried out on the total scores of the semantic differential. Chi-square contingency tests were carried out for the comparison of the high and low attitude groups for selected variables. The Fisher z test was used to test the significance of difference between independent proportions on selected questionnaire items.

Chapter IV

DISCUSSION OF THE RESULTS

The aims of this study are fourfold:

1) to determine if there exists a relationship between the attitude of teachers toward the language laboratory and their professional preparation in its use;

2) to determine if there exists a relationship between the attitude of teachers toward the language laboratory and the manner in which they use it;

3) to determine if there exists a relationship between the professional preparation of teachers in the use of the language laboratory and the manner in which they use it, and

4) to determine the nature of future pre-service and in-service programs in language laboratory techniques.

The results of the data analyses are presented in four sections. The first section presents the analysis of the semantic differential data. The second section presents the analyses of questions dealing with the professional preparation and experience in second language teaching. The third section deals with the actual teaching situation: that is, the manner in which the language laboratory is used, the frequency with which it is used, and other instructionally related data. The fourth section deals with the suggestions made by teachers of French for in-service training as well as further comments or suggestions regarding language laboratory use.

The Semantic Differential Technique

The semantic differential, developed by Charles E. Osgood and described in Osgood *et al.* (1957), is a type of rating scale which measures the affective and cognitive aspects of attitudes. It essentially involves repeated judgements of a concept against a set of bipolar adjectives.

Osgood, Suci, and Tannenbaum (1969:58) write that in order to determine one's attitude toward a particular subject or concept, it is necessary to present a selection of alternative responses in order that the "meaning" of a stimulus sign be gradually isolated. This selection of alternative responses, usually adjectives, is preferable to the reliance upon a spontaneous emission of adjectives from the respondents toward a subject or concept. The sensitivity of the instrument is increased by the insertion of a seven-point scale between each adjective pair. According to Osgood *et al.* (1969:79), the seven-point scale has been one of the constants in their work with this technique.

The respondents' task is to indicate on each of the seven-point scales the direction and intensity of association to a given subject or concept.

An example of an adjective pair would be:

good ___:___:___:___:___:___:___ bad

Because the adjective scales are frequently regarded as difficult or unfamiliar to the subject or concept presented, respondents are encouraged to mark the scales as quickly and as honestly as possible without puzzling over any particular adjective pair.

The adjective scales consist of a number of polar adjective pairs. In scoring the semantic differential, scale values or weightings are assigned to each scale position, and these in turn can be converted to individual or group mean scores and presented in profile form.

The correlations among the responses to the adjective pairs are usually factor analyzed and tend to cluster into three primary groups labelled by Osgood as evaluative, potency, and activity factors. The evaluative factor is made up of adjectives which are affect-laden and indicate how the subject feels about the concept, e.g., good-bad. The potency factor is made up of adjectives concerned with power, e.g., strong-weak. The activity factor is made up of adjectives which are associated with rigor, rapidity, and agitation, e.g., active-passive.

In Chapter 2 of *The Measurement of Meaning*, Osgood *et al.* (1957) describe five factor analytic studies to determine the major factors. An essentially similar factor structure reappears. The evaluative factor tends to account for one-fourth to one-third of the total variance. This is approximately twice the total variance accounted for by the potency factor, which in turn accounts for approximately twice the total variance accounted for by the activity factor.

The reliability of the semantic differential is usually high. Test retest studies have yielded an average reliability coefficient of 0.80 to the scales (Osgood, 1969:136).

The semantic differential is claimed to have a number of advantages over other types of attitude measures:

1. It provides a comprehensive picture of the connotative meaning of a concept or subject. The language laboratory can be looked

upon favorably by many, but can be reacted to differently in terms of activity, helpfulness, clarity, and so forth.

2. It avoids stereotyped responses toward a concept or subject.
3. It eliminates the problems of question phrasing.
4. It is a quick, efficient means of getting at both the direction and the intensity of attitudes toward a subject or concept.
5. It enables one to compare differences in attitudes between groups.
6. It enables one to compare differences in attitude across time.

The semantic differential for the present study consists of 21 scales used by other researchers in determining attitude toward instructional media (Smith and Hocking, 1969; Smith and Woerdehoff, 1970). The concept to be assessed is the attitude teachers of French hold toward the language laboratory. Each scale presents a seven-step progression from one polar adjective to its opposite. Each step is assigned an arbitrary value (1, 2, 3, etc.), progressing from 1 at the left to 7 at the right. The direction of the polarity of eight of the scales was alternated as a precaution against response bias. The checks made by the respondents are then scored according to which step in the scale is checked.

Analysis of the Semantic Differential

Table 2 presents the frequency distribution of the semantic differential scale scores for the 91 respondents. Figure 1, a histogram, presents a graphical report of the distribution of the scores.

TABLE 2. Frequency Distribution of Semantic Differential Scale Scores

Interval	Frequency
100-109	1
90-99	1
80-89	6
70-79	5
60-69	20
50-59	32
40-49	18
30-39	8
Total	91

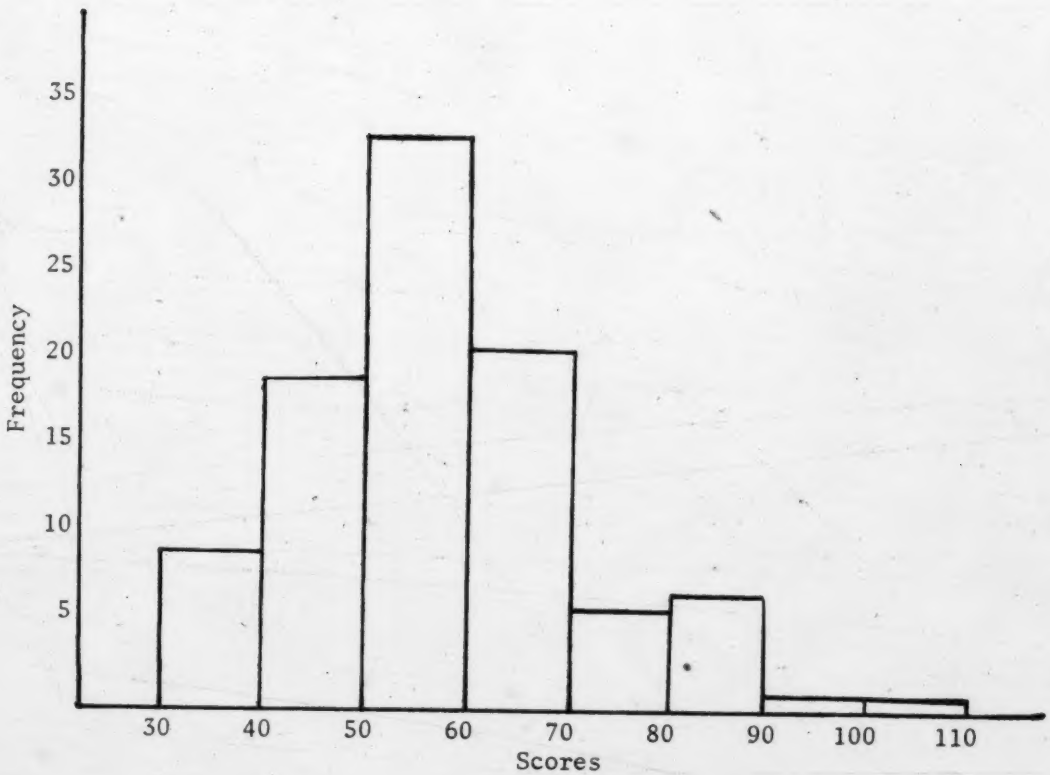

Figure 1. Histogram of the semantic differential scale scores.

The semantic differential scale scores could range from 21 to 147. In this study, the scores actually ranged from 32 to 103, with 70 (76.9%) of the scores falling in the range of 40 to 69. The scores of the respondents were skewed to the positive side, indicating a positive orientation toward the language laboratory.

The most frequent category, 50 to 59, was indicated by 32 (35.2%) of the respondents. On this basis, these 32 respondents became the mid attitude teacher group. The 26 teachers with scores of 49 or less became the high attitude teacher group, and the 33 teachers with scores of 60 or more became the low attitude teacher group.

Factor Analysis of the Scales

The intercorrelations among the 21 scales for the 91 subjects were subjected to a principal components analysis followed by a varimax rotation. Table 3 presents the results of the principal components analysis based on the individual ratings (subjects × scales) for the total sample of subjects. Three factors emerged and accounted for 50% of trace; Factor I accounting for 52% of common variance, Factor II for 29% of common variance, and Factor III for 18% of 18% of common variance.

Factor I loaded highest on good-bad, valuable-worthless, meaningful-meaningless, rewarding-punishing, helpful-unhelpful, and definite-uncertain. These adjective pairs appear to reflect the evluative dimension. Factor II loaded highest on personal-impersonal, graceful-awkward, powerful-weak, gentle-violent, and profound-superficial. These adjective pairs appear to reflect the potency dimension. Factor III loaded highest on resting-busy, lenient-severe, complex-simple, and

TABLE 3. Varimax Rotation of Principal Axis Solution

	Variables	Communalities	Factors I	II	III
I	bad - good	.66	.81	-.02	-.09
	passive - active	.46	.54	.40	-.06
I	boring - interesting	.38	.60	.08	.11
III	relaxed - tense	.39	.16	.30	.52
III	complex - simple	.37	-.03	.21	.57
II	powerful - weak	.55	.33	.66	.08
I	helpful - unhelpful	.60	.69	.37	.00
I	rewarding - punishing	.59	.70	.29	-.08
I	pleasing - annoying	.55	.62	.36	.19
	untimely - timely	.32	-.24	-.49	.15
II	awkward - graceful	.49	.13	.67	.16
	safe - threatening	.37	.42	.39	.21
II	personal - impersonal	.51	.17	.69	-.03
III	resting - busy	.65	.48	.26	-.76
I	clear - hazy	.48	.66	.21	.10
III	lenient - severe	.43	.08	.00	.65
I	meaningless - meaningful	.71	.81	.22	.01
II	superficial - profound	.49	.44	.51	.20
I	worthless - valuable	.71	.83	.17	-.05
II	gentle - violent	.43	.03	.52	.40
I	definite - uncertain	.53	.70	.13	.14
	Percentage of Trace	10.66	5.54	3.14	1.99

relaxed-tense. These adjective pairs appear to reflect the activity dimension.

The results tend to support the factorial validity of the semantic differential scales as interpreted by Osgood when the instrument is applied to the measurement of attitude toward the language laboratory.

The Differences in the Groups

Table 4 presents the means and variances for the three teacher groups. Table 5 presents the data for the one-way analysis of variance of the total scores on the semantic differential for the high, mid, and low attitude teacher groups. This table also contains the χ^2 for the homogeneity of variance between the distributions of the three groups. Table 6 presents the probability matrix for Scheffé's multiple comparison of means for the three teacher groups (Ferguson, 1971:270-271). Not unexpectedly, as a result of the middle one-third of the semantic differential scale scores falling into one ten-unit interval (see Fig. 1), the variances of the three teacher groups lacked homogeneity making further comparisons via analysis of variance somewhat questionable. The numerical results are presented, but must be viewed with extreme caution regarding their statistical validity.

The means of the three groups were significantly different ($p < 0.001$). Since all the group means differed significantly from one another, one can be justified in claiming that these three teacher groups did indeed view the language laboratory differently. The teacher group with the highest mean (71.09) tended to view the language laboratory *as being relatively less valuable*, while the teacher group with the lowest mean (43.42) tended to view it *as being relatively more valuable*.

TABLE 4. Means and Variances: Semantic Differential Scale Scores for the Three Teacher Groups

Group	n	Mean	Variance
1 (Low Attitude)	33	71.09	115.15
2 (Mid Attitude)	32	54.84	8.01
3 (High Attitude)	26	43.42	26.50
	91	57.47	176.58

TABLE 5. One-way Analysis of Variance for the Three Teacher Groups

Source	SS	ms	df	F	p
Groups	0.11	5736.69	2	109.86	< 0.001
Error	0.46	52.22	88		

Homogeneity of variance $\chi^2 = 49.04$ $p = < 0.001$

TABLE 6. Probability Matrix for Scheffé's Multiple Comparison of Means

	1	2
1		
2	< 0.001	
3	< 0.001	< 0.001

Scheffés multiple comparison of means revealed significant differences between the three pairs of means; that is, between high and mid, mid and low, and high and low.

On the basis of the analysis just presented, the mid teacher group was dropped from further statistical analysis because, though it represented approximately one-third of the total group, comparisons of the two extreme groups were considered more likely to reveal measurable differences in instructional approaches related to attitude. Furthermore, the groups were to be of sufficient size to allow meaningful generalizations to be made. For the presentation and discussion of the descriptive data, the mid attitude group was retained.

Inter-group Comparisons

In order to compare frequencies to responses on key questions, the Chi-square test (Ferguson, 1971:182-184) was used to compare the high and low attitude teacher groups. The Chi-square test is used to compare the frequencies of respondents in various categories. The level of significance for the rejection of the null hypothesis of independence is 0.001.

For null hypotheses 1.1, 1.2, 1.3, 1.4, and 1.5, the Chi-square test was used to compare the high and low attitude groups on professional preparation and experience.

Hypothesis 1.1 refers to the comparison of the two teacher groups on the number of years of training completed beyond high school; that is, there is no significant relationship between attitude toward the language laboratory and the number of years of training completed beyond

high school. The analysis of the difference between the two groups is presented in Table 7. The difference between the two groups was not significant. The number of years of training beyond high school and the attitude the teachers held toward the language laboratory had no significant relationship to one another.

Hypothesis 1.2 refers to the comparison of the two teacher groups on the number of years of experience in teaching French; that is, there is no significant relationship between attitude toward the language laboratory and the number of years of experience teaching French. Table 8 presents the results of the analysis. Again no significant relationship was found to exist between attitude toward the language laboratory and the number of years of experience teaching French.

Hypothesis 1.3 refers to the comparison of the two teacher groups on the number of years of access they have had to the language laboratory as teachers; that is, there is no significant relationship between attitude toward the language laboratory and the number of years of access to the language laboratory as teachers. Table 9 presents the results of the analysis. No significant relationship was found to exist between attitude toward the language laboratory and the number of years of teacher access to it.

Hypothesis 1.4 refers to the comparison of the two teacher groups on the number of French language and/or literature courses completed; that is, there is no significant relationship between attitude toward the language laboratory and the number of French language and/or literature courses completed at the university level. Table 10 presents the analysis of the results. The first three categories of the number

TABLE 7. Chi-square: Comparison of the High and Low Attitude Teachers and Their Years of Training Beyond High School

Semantic Differential Scale Scores	Years of Training			
	2	3	4	5+
Low	2	1	15	15
High	0	1	8	17

$\chi^2 = 3.47$ df = 3 p = 0.32

TABLE 8. Chi-square: Comparison of the High and Low Attitude Teachers and Their Years of Experience Teaching French

Semantic Differential Scale Scores	Years of Experience			
	1	2-4	5-8	9+
Low	6	9	7	11
High	0	9	7	10

$\chi^2 = 5.30$ df = 3 p = 0.15

TABLE 9. Chi-square: Comparison of the High and Low Attitude Teachers and Their Years of Access to a Language Laboratory

Semantic Differential Scale Scores	Years of Access to a Laboratory			
	1	2-3	4-5	6+
Low	12	11	7	3
High	5	9	7	4

$\chi^2 = 2.16$ df = 3 p = 0.54

TABLE 10. Chi-square: Comparison of the High and Low Attitude Teachers and the Number of French Language and/or Literature Courses Completed

Semantic Differential Scale Scores	Number of French Language and/or Literature Courses	
	0-2	3+
High	2	23
Low	6	27

$\chi^2 = 1.24$ df = 1 p = 0.27

of courses (none, 1, and 2) were combined into one category as the number of teachers in these three categories was very small. The majority of teachers fell into category 4 (3 or more courses). Thus, for the purpose of this test, the teachers were categorized as those having completed two or less courses, and those having completed three or more courses. It is noted here that the high and low groups were reversed. No significant relationship was found to exist between attitude toward the language laboratory and the number of French language and/or literature courses completed.

Hypothesis 1.5 refers to the comparison of the two teacher groups on the number of courses in curriculum and instruction completed in second language teaching; that is, there is no significant relationship between attitude toward the language laboratory and the number of curriculum and instruction courses completed in second language teaching. Table 11 presents the results of the analysis. No significant relationship was found to exist between attitude toward the language laboratory and the number of curriculum and instruction courses completed in second language teaching.

The Fisher z test (Ferguson, 1971:173-174) is used to test the significance of difference between two independent proportions. The critical values for the Fisher z test are 1.96, 2.58, and 3.29 for the 0.05, 0.01, and 0.001 levels, respectively.

For null hypotheses 1.6 and 1.7, the Fisher z test was used to compare the high and low attitude teacher groups.

Hypothesis 1.6 refers to the comparison of the two teacher groups on the type of training they have had in language laboratory methods and

TABLE 11. Chi-square: Comparison of the High and Low Attitude Teachers and the Number of Courses Completed in Curriculum and Instruction in Second Language Teaching

Semantic Differential Scale Scores	Number of Curriculum and Instruction Courses in Second Language Teaching			
	0	1	2	3+
Low	2	11	9	11
High	1	3	3	18

$\chi^2 = 8.66$ df = 3 p = 0.03

materials. The results of the analysis are presented in Table 12. No significant difference was found to exist between the kind of training taken in language laboratory methods and materials for either the high or the low attitude teacher group.

Hypothesis 1.7 refers to the comparison of the two teacher groups on the type of training they had in audio-visual methods and materials. The results are presented in Table 13. No significant difference was found to exist between the kind of training (pre-service versus in-service) taken by the high attitude group. However, a significant difference in the proportion of low attitude teachers reporting pre-service and in-service training emerged ($z = 1.99$; $p < 0.05$). The results suggest that the nature of the training may have a bearing on attitude. The low attitude group reported a somewhat higher incidence of in-service training while the high attitude group appears to have received more pre-service training in audio-visual methods and materials.

The Descriptive Data of the Questionnaire

Attitude and Language Laboratory Use

To determine the manner of language laboratory use, teachers were asked: a) how they used the language laboratory; b) the techniques of teaching they used in it; c) their objectives in teaching French, and d) the actual amount of time they used the language laboratory.

The teachers were asked to indicate their responses on the basis of the courses they taught. The three courses taught in the 37 schools were *Voix et Images de France* (VIF), Audio-Lingual Series comprising *Ecouter et Parler* (E&P) and *Chez les Français* (Ch.Fr.), and *Audio-Lingual*

TABLE 12. Fisher z: Comparison of the High and Low Attitude Teachers and Their Training in Language Laboratory Methods and Materials

Semantic Differential Scale Scores	Type of Training					
	None	Pre-service	In-service	Both	z	p
Low (n = 33)	.27	.18	.42	.12	-1.78	n.s.
High (n = 25)	.16	.32	.28	.24	1.15	n.s.

TABLE 13. Fisher z: Comparison of the High and Low Attitude Teachers and Their Training in Audio-visual Methods and Materials

Semantic Differential Scale Scores	Type of Training					
	None	Pre-service	In-service	Both	z	p
Low (n = 33)	.30	.12	.36	.21	1.99	< 0.05
High (n = 25)	.28	.28	.20	.24	.577	n.s.

Materials (A-LM). Teachers who taught *Parler et Lire* were asked to note it in the *Chez les Français* column.

The frequencies and percentages of responses to the questions regarding the manner of language laboratory use will be presented for the teachers on the basis of the subjects they taught, as well as on the basis of their attitudes toward the language laboratory. As well, they will be presented in the following order:

1) teachers' objectives in teaching French;

2) amount of time the language laboratory is used;

3) how the language laboratory is used, and

4) the techniques of teaching used in the language laboratory.

In discussing their objectives teachers were asked to provide the information indicated below:

Part IV, Question 3

What are your objectives in teaching French?

a) oral proficiency in the language

b) reading ability

c) writing ability

d) comprehension of the spoken language

e) preparation for the study of literature

f) others (please specify).

Tables 14 and 15 present the frequencies of responses to this question.

In all the courses taught, the majority of the teachers chose the first four objectives most frequently. Of the 37 VIF teachers, 36 (97.3%) indicated objectives 'a' through 'd'. Of the 62 E&P teachers, 57 (91.9%) chose objective 'a', 55 (88.7%) chose objective 'b', 50

TABLE 14. Frequencies and Percentages of Responses: Objectives of Teaching French as Perceived by the Teachers of Specific Courses

Objective	VIF n = 37		E&P n = 62		Ch.Fr. n = 46		A-LM n = 4	
	F	%	F	%	F	%	F	%
a.	36	97.3	57	91.9	39	84.8	4	100
b.	36	97.3	55	88.7	43	93.5	4	100
c.	36	97.3	50	80.6	42	91.3	4	100
d.	36	97.3	60	96.8	43	93.5	4	100
e.	11	29.7	19	30.6	22	47.5	3	75
f.	3	8.1	2	3.2	3	6.5	0	0

TABLE 15. Frequencies of Responses: Objectives of Teaching French as Perceived by the Low, Mid, and High Attitude Teachers of Specific Subjects

	VIF			E&P			Ch.Fr.			A-LM		
Objectives	High n = 13	Mid n = 10	Low n = 13	High n = 13	Mid n = 24	Low n = 25	High n = 11	Mid n = 18	Low n = 17	High n = 3	Mid n = 1	Low n = 0
a.	13	10	13	13	23	21	11	15	13	3	1	
b.	13	10	13	12	23	20	11	16	16	3	1	
c.	13	10	13	10	22	18	11	16	15	3	1	
d.	13	10	13	13	24	23	11	17	15	3	1	
e.	3	3	5	7	7	5	5	11	6	3	0	
f.	0	0	3	0	1	1	1	1	1	0	0	

(80.6%) chose objective 'c', and 60 (96.8%) chose objective 'd'. Of the 46 Ch.Fr. teachers, 39 (84.8%) chose objective 'a', 43 (93.5%) chose objective 'b', 42 (91.3%) chose objective 'c', and 43 (93.5% chose objective 'd'. All of the A-LM teachers chose the first four objectives.

A number of the teachers who indicated that they had other objectives in teaching French unfortunately did not specify what these objectives were. Three teachers did indicate final exam preparation as an objective.

When comparing the teachers on the basis of their attitudes toward the language laboratory, the majority of the low, mid, and high attitude teachers indicated the first four objectives most frequently.

With respect to utilization of the laboratory, the allotment of time used was as shown below:

Part IV, Questions 4 and 5

How many periods per week do your classes usually use the lab?

a) one period

b) two periods

c) three periods

d) four periods

e) five periods

f) other arrangements (please specify).

How many minutes of actual lab work is done in each period listed in answer 4?

a) 10 minutes or less

b) 10 - 20 minutes

c) 20 - 30 minutes

d) 30 minutes or more.

NOTE: How long are the class periods in your school? _____

For Tables 16 and 17, the responses to questions 4 and 5 are combined. The number of periods the language laboratory was used each week is broken down by the actual percentage of time spent in the language laboratory during the period. Thus, if the language laboratory was used 10 minutes or less out of an 80-minute period, the percentage time is less than 20%.

Because a number of the teachers indicated other arrangements for their time in the language laboratory, the number of teachers appearing in the tables is smaller than the actual number teaching each course. Of the 37 VIF teachers, one never used the language laboratory. It should be noted here that this teacher was one with a low attitude toward the language laboratory.

Of the 62 E&P teachers, 59 used the language laboratory on a regular basis. Of the three who did not, one used it for testing, another used it frequently but irregularly, while the third used it only a few periods per year.

Of the 46 Ch.Fr. teachers, 38 used the language laboratory on a regular basis. Of the eight who did not, two used it once per unit, two used it frequently but irregularly, three rarely used it, and one never used it. The Ch.Fr. teacher already referred to, who never used the language laboratory, is also the VIF teacher who did not use it. Of the three teachers who rarely used the language laboratory, one pointed out that it never seemed to work properly.

While two of the A-LM teachers indicated daily use of the language laboratory, two indicated that their students used the language laboratory for individual progress.

TABLE 16. Frequencies and Percentages of Responses: Amount of Language Laboratory Time per Week Used by the Teachers of Specific Courses

No. of Periods	Percentage Time of Period	VIF n = 35		E&P n = 59		Ch.Fr. n = 38		A-LM n = 2	
		F	%	F	%	F	%	F	%
1	less than 20%	1	2.7	1	1.7	1	2.6		
	20-40%	3	8.3	3	5.1	4	10.5		
	40-60%	4	11.1	8	13.6	8	21.1		
	more than 60%	3	8.3	7	11.9	8	21.1		
2	less than 20%								
	20-40%	7	19.4	8	13.6	5	13.2		
	40-60%	6	16.7	5	11.9	3	7.9		
	more than 60%			2	3.4				
3	less than 20%								
	20-40%	2	5.6	5	11.9	4	10.5		
	40-60%	1	2.7	3	5.1				
	more than 60%					1	2.6		
4	less than 20%								
	20-40%	1	2.7	6	16.7				
	40-60%	1	2.7	3	5.1				
	more than 60%								
5	less than 20%								
	20-40%	7	19.4	7	11.9	3	7.9	2	50.0
	40-60%			1	1.7	1	2.6		
	more than 60¢								

TABLE 17. Frequencies of Responses: Amount of Language Laboratory Time per Week Used by the Teachers of Specific Courses

No. of Periods	Percentage Time of Period	VIF			E&P			Ch.Fr.			A-LM		
		High n=13	Mid n=10	Low n=13	High n=13	Mid n=22	Low n=24	High n=9	Mid n=16	Low n=13	High n=1	Mid n=1	Low n=0
1	less than 20%			1	1			1					
	20-40%		3			1	2		2	2			
	40-60%	1	1	2		5	3	1	4	3			
	more than 60%			2	2	3	2	3	4	1			
2	less than 20%												
	20-40%	4	2	1	2	4	2	1	2	2			
	40-60%	2		4	1	2	2		1	2			
	more than 60%					1	1						
3	less than 20%												
	20-40%	1		1	2	2	1	1	1	2			
	40-60%		1				3						
	more than 60%								1				
4	less than 20%												
	20-40%			1	2	1	3						
	40-60%	1			1	1	1						
	more than 60%												
5	less than 20%												
	20-40%	3	3	1	2	2	3	1	1	1	1	1	
	40-60%						1	1					
	more than 60%												

It is interesting to note that with the exception of one teacher, all the teachers in the study used the language laboratory. Two teachers rarely used the language laboratory, while two used it rarely for Ch.Fr. but regularly for E&P.

The teachers who used the language laboratory on a regular basis tended to use it one or two periods per week. This trend was especially apparent for the Ch.Fr. teachers. With the exception of one teacher whose class periods were 67 minutes in length, all the teachers who used the language laboratory four or five times per week had 80-minute class periods. Taking a portion of an 80-minute class period for language laboratory practice may add variety to class work.

With respect to actual use of the language laboratory, the following information was sought:

Part IV, Question 1

How do you use the language laboratory?

a) as a regular classroom

b) as a practice lab

c) for oral testing

d) for students who are preparing or recording oral compositions

e) for students who are pursuing individual projects

f) as an integral part of the classroom (lab work is integrated with the course)

g) as a listening room only

h) others (please specify).

Tables 18 and 19 present the frequencies of responses to this question. In all the courses taught, the language laboratory was used by

TABLE 18. Frequencies and Percentages of Responses: Manner of Language Laboratory Use by the Teachers of Specific Courses

Use	VIF n = 37		E&P n = 62		Ch.Fr. n = 46		A-LM n = 4	
	F	%	F	%	F	%	F	%
a.	5	13.5	13	20.9	7	15.2	0	0
b.	33	89.2	54	87.1	39	84.8	4	100
c.	29	78.4	52	83.9	34	73.9	4	100
d.	13	35.1	16	25.8	13	28.3	3	75
e.	10	27.0	12	19.4	9	19.6	4	100
f.	32	86.5	55	88.7	33	71.7	4	100
g.	2	5.4	3	4.8	2	4.3	0	0
h.	3	8.1	4	6.5	4	8.7	0	0

TABLE 19. Frequencies of Responses: Manner of Language Laboratory Use by the Low, Mid, and High Attitude Teachers of Specific Courses

	VIF			E&P			Ch.Fr.			A-LM		
Use	High n=13	Mid n=10	Low n=14	High n=13	Mid n=24	Low n=25	High n=11	Mid n=18	Low n=17	High n=3	Mid n=1	Low n=0
a	3	0	2	2	5	6	1	3	3	0	0	
b	13	9	11	13	18	23	11	14	14	3	1	
c	12	8	9	12	19	21	8	15	11	3	1	
d	5	5	3	7	4	5	4	5	4	2	1	
e	4	2	4	2	4	6	2	4	3	3	1	
f	12	8	12	13	22	20	8	14	11	3	1	
g	2	0	0	1	0	2	0	1	1	0	0	
h	0	2	1	0	4	0	0	4	0	0	0	

the majority of the teachers as a practice lab, for oral testing, and as an integral part of the classroom. It was used as a practice lab by 33 (89.2%) of the VIF teachers, 54 (87.1%) of the E&P teachers, 39 (84.8%) of the Ch.Fr. teachers and all four of the A-LM teachers. It was used for oral testing by 29 (78.4%) of the VIF teachers, 52 (83.9%) of the E&P teachers, 34 (73.9%) of the Ch.Fr. teachers, and all four of the A-LM teachers. As an integral part of classroom work, it was used by 32 (86.5%) of the VIF teachers, by 55 (88.7%) of the E&P teachers, 33 (71.7%) of the Ch.Fr. teachers, and all four of the A-LM teachers.

A number of teachers added that they also made use of film strips, magazines, recordings, and even radio broadcasts in the language laboratory in order to facilitate conversation between students. Several also indicated that they used the language laboratory in order to give the students extra reading practice.

When comparing the teachers on the basis of their attitudes toward the language laboratory, the three attitude groups used the laboratory primarily as a practice lab, for oral testing, and as an integral part of classroom work.

The actual language laboratory activities used were sought in the following question:

Part IV, Question 2

What techniques of teaching do you use in the language lab?

a) pronunciation and intonation drill

b) aural drill for the comprehension of the spoken language

c) aural drill (repetition of phrases)

d) memorizing material for conversation

e) dictation

f) showing of films

g) showing of visual materials

h) use of readings for cultural purposes

i) aural-oral tests and examinations

j) aural-oral tests for reading comprehension

k) others (please specify).

The frequencies of the responses to this question are presented in Tables 20 and 21. The majority of the teachers in the study used the language laboratory for pronunciation and intonation drill, and for aural-oral tests and examinations. Of the 37 VIF teachers, 31 (83.8%) used the language laboratory for pronunciation and intonation drill, 29 (78.4%) for aural drill for the comprehension of the spoken language, 27 (73%) for aural drill, and 30 (81.1%) for aural-oral tests and examinations. Of the 62 E&P teachers, 48 (77.4%) used it for pronunciation and intonation drill, 55 (88.7%) for aural drill for the comprehension of the spoken language, 51 (82.3%) for aural drill, and 49 (79%) for aural-oral tests and examinations. Of the 46 Ch.Fr. teachers, 30 (65.2%) used it for pronunciation and intonation drill, 38 (82.6%) for aural drill for the comprehension of the spoken language, 27 (58.7%) for aural drill, and 33 (71.7%) for aural-oral tests and examinations. All four A-LM teachers used it for pronunciation and intonation drill, aural drill for the comprehension of the spoken language, and aural drill, while three used it for aural-oral tests and examinations.

The language laboratory was used to a lesser degree for pronunciation and intonation drill and for aural drill by the Ch.Fr. teachers

TABLE 20. Frequencies and Percentages of Responses: Language Laboratory Techniques Used by the Teachers of Specific Courses

Technique	VIF n=37		E&P n=62		Ch.Fr. n=46		A-LM n=4	
	F	%	F	%	F	%	F	%
a	31	83.8	48	77.4	30	65.2	4	100
b	29	78.4	55	88.7	38	82.6	4	100
c	27	73.0	51	82.3	27	58.7	4	100
d	9	24.3	17	27.4	5	10.9	0	0
e	9	24.3	21	37.1	11	23.9	4	100
f	5	13.5	11	17.7	11	23.9	0	0
g	3	8.1	6	9.7	5	10.9	0	0
h	13	35.1	8	12.9	11	23.9	3	75
i	30	81.1	49	79.0	33	71.7	3	75
j	18	48.6	35	56.5	27	58.7	3	75
k	3	8.1	3	4.8	2	4.3	0	75

TABLE 21. Frequencies and Responses: Language Laboratory Techniques Used by the Low, Mid, and High Attitude Teachers of Specific Courses

Technique	VIF			E&P			Ch.Fr.			A-LM		
	High n=13	Mid n=10	Low n=14	High n=13	Mid n=24	Low n=25	High n=11	Mid n=18	Low n=17	High n=3	Mid n=1	Low n=0
a	10	9	12	7	19	22	9	11	10	3	1	
b	12	8	9	12	20	23	9	15	14	3	1	
c	12	7	8	12	20	19	7	13	7	3	1	
d	4	3	2	4	4	9	3	1	1	0	0	
e	2	4	4	8	9	4	6	1	3	1		
f	2	2	1	5	3	3	2	3	1	0	0	
g	1	1	1	0	2	4	0	2	3	0	0	
h	7	2	4	2	2	4	4	3	4	3	0	
i	10	9	11	8	20	21	7	14	12	3	0	
j	7	4	7	4	15	16	4	13	10	3	0	
k	2	1	0	2	1	0	1	1	0	0	0	

than by the other course teachers. This is understandable as Ch.Fr. is a senior course, and presumably students who have reached this level have already had this type of drill in earlier levels of French instruction.

A number of the teachers used the language laboratory for aural-oral tests for reading comprehension. This technique was used by 18 (48.6%) of the VIF teachers, 35 (56.5%) of the E&P teachers, 27 (58.7%) of the Ch.Fr. teachers, and three of the A-LM teachers.

Of those teachers indicating that they used language laboratory techniques other than those listed, a number specified that they played songs, presented dialogues for initial drill, drilled structures and grammar, and exercised the students' listening comprehension and fluency.

When comparing the teachers on the basis of their attitudes toward the language laboratory, the majority still used it for pronunciation and intonation drill, aural drill for the comprehension of the spoken language, aural drill, and for aural-oral tests and examinations.

Professional Preparation and Language Laboratory Use

The high and the low attitude teacher groups were compared earlier on variables related to professional preparation. These included the number of years of teacher training, the number of years of teacher access to the language laboratory, the number of years of experience teaching French, the number of courses completed in French language and/or literature courses, the number of curriculum and instruction courses completed in second language teaching, as well as the type of training teachers have had in language laboratory and audio-visual methods and materials.

No significant differences were found between the low and high attitude groups on all the variables, but one. The higher proportion of in-service training taken in audio-visual methods and materials was significantly related ($z = 1.99$; $p < 0.05$) to the attitude of the low teacher group only. However, it must be remembered that audio-visual methods and materials does not necessarily include language laboratory training.

For comparison of teacher attitude and the actual manner of language laboratory use, the mid attitude teacher group was included. No differences were found to exist among the three teacher groups in the manner in which they used the language laboratory.

Since no significant differences were found to exist between attitude and professional preparation, and between attitude and manner of use, it can be said that professional preparation of the teachers in this study did not influence their use of the language laboratory.

Instructionally Related Data Pertaining to the Language Laboratory

The frequencies and percentages of responses will be presented and discussed both for the teachers as a total group, and as the high, mid, and low attitude groups.

To determine the extent to which teachers' professional knowledge with respect to the language laboratory had been improved, the following question was asked:

Part II, Question 8

In which of the following activities related to improving your knowledge of the French language and/or methodology have you participated

during the past five years? (Check as many as apply).

a) summer school and/or evening classes

b) institutes and/or workshops

c) travel or study in a French-speaking area

d) regular reading of professional journals, research reports, etc.

e) others (please specify).

The frequencies of responses to this question are presented in Table 22. Of the 89 teachers responding to this question, 49 (55.1%) had taken summer school and/or evening classes, 60 (67.4%) had attended institutes and/or workshops, 43 (48.3%) had travelled or studied in a French-speaking area, and 52 (58.4%) regularly read professional journals, research reports, etc.

Twenty-three (25.8%) indicated that they had participated in other activities, some of which consisted of fairly extensive reading in French, taking French extension courses, and observing other teachers. Several teachers had worked as language laboratory assistants while they were graduate students. One teacher had worked for the National Film Board, while another had taught in France.

When comparing the teachers on the basis of their attitudes toward the language laboratory, some differences were noted among the groups. While 16 (64%) of the high attitude teachers and 18 (54.5%) of the low attitude teachers had attended institutes and/or workshops, 26 (83.9%) of the mid attitude teachers had done so. Eighteen (72%) of the high attitude teachers regularly read professional journals, research reports, etc., while 17 (54.8%) of the mid attitude teachers and 17 (51.5%) of the low attitude teachers did so.

TABLE 22. Frequencies and Percentages of Responses: Activities Related to the Teachers' Knowledge of the French Language and/or Methodology

Activity	High n=25		Mid n=31		Low n=33		Total n=89	
	F	%	F	%	F	%	F	%
a	16	64.0	17	54.8	16	48.5	49	55.1
b	16	64.0	26	83.9	18	54.5	60	67.4
c	14	56.0	19	62.9	10	30.3	43	48.3
d	18	72.0	17	54.8	17	51.5	52	58.4
e	3	12.0	9	29.0	11	33.3	23	25.8

Since a major advantage of the audio-active-compare language laboratory is its ability to allow students to listen to themselves, the following question was asked:

Part IV, Question 6

In general, what proportion of time your classes spend in the language lab is used for student recording?

a) less than 20%

b) 20 - 40%

c) 40 - 60%

d) more than 60%.

Table 23 presents the frequencies of responses to this question. No proportion of time for student recording appeared to be used more frequently than the others. Of the 89 teachers responding to this question, 25 (28.1%) spent less than 20% of their time in the language laboratory for student recording, 29 (32.6%) spent 20 to 40%, 20 (22.5%) spent 40 to 60%, and 15 (16.8%) spent more than 60%. What is encouraging here is that the recording facilities were being used by the students. Once the students record the master tape, they can then proceed at their own rate.

Language laboratories have been criticized for down time. To determine if this was a valid complaint the following question was asked:

Part IV, Question 7

In general what proportion of time is your language lab inoperable (due to mechanical problems)?

a) less than 10%

b) 10 - 20%

c) 20 - 30%

d) more than 30%.

TABLE 23. Frequencies and Percentages of Responses: Proportion of Language Laboratory Class Time Spent for Student Recording

Time	High n=25		Mid n=32		Low n=32		Total n=89	
	F	%	F	%	F	%	F	%
a	7	28.0	7	21.9	11	34.4	25	28.1
b	7	28.0	12	37.5	10	31.3	29	32.6
c	5	20.0	8	25.0	7	21.9	20	22.5
d	6	24.0	5	15.6	4	12.4	15	16.8

TABLE 24. Frequencies and Percentages of Responses: Proportion of Time the Language Laboratory is Inoperable

Time	High n=26		Mid n=32		Low n=32		Total n=90	
	F	%	F	%	F	%	F	%
a	24	92.3	30	93.7	28	87.4	82	91.1
b	0	0.0	0	0.0	2	6.3	2	2.2
c	0	0.0	0	0.0	0	0.0	0	0.0
d	2	7.7	2	6.3	2	6.3	6	6.7

Table 24 presents the frequencies of responses to this question. Of the 90 teachers responding, 82 (91.1%) indicated that the language laboratory was inoperable less than 10% of the time, two (2.2%) indicated that it was inoperable 10 to 20% of the time, while six (6.7%) indicated it was inoperable more than 30% of the time.

Two of the teachers who indicated that the language laboratory was inoperable more than 30% of the time were situated in schools where their colleagues indicated it was inoperable less than 10% of the time. One could speculate here that these teachers had experienced frequent mechanical problems and could at times not complete their work. In actual fact, one of these teachers did indicate on a later question that the equipment was poorly maintained.

Teachers have complained in the past that the effective use of the language laboratory requires a great deal of preparation time. To see how much time is actually spent in preparation, the following question was asked:

Part IV, Question 8

What proportion of your preparation time for French do you devote to materials for use in the lab?

a) less than 20%

b) 20 - 40%

c) 40 - 60%

d) more than 60%.

The frequencies of responses to this question are presented in Table 25. Of the 90 teachers responding, 62 (68.9%) indicated that less than 20% of their preparation time for French was devoted to materials for use in the language laboratory. While none of the low or mid

TABLE 25. Frequencies and Percentages of Responses: Proportion of French Preparation Time Devoted to Language Laboratory Materials

Time	High n=26		Mid n=32		Low n=32		Total n=90	
	F	%	F	%	F	%	F	%
a	16	61.5	22	68.7	24	75.0	62	68.9
b	5	19.3	10	31.3	8	25.0	23	25.6
c	3	11.5	0	0.0	0	0.0	3	3.3
d	2	7.7	0	0.0	0	0.0	2	2.2

attitude teachers devoted more than 40% of their French preparation time to laboratory materials, 5 (19.3%) of the high attitude teachers did.

Availability of software may influence the teachers' attitudes. The following question was asked in an attempt to determine the sources of this material:

Part IV, Question 9

Where do you get the materials you use in the lab? (Check as many as apply).

a) prepared by me

b) prepared by me in cooperation with my colleagues

c) commercially prepared recordings

d) recordings prepared by my school district

e) recordings made available by the Department of Education

f) recordings borrowed or rented from other schools

g) others (please specify).

The frequencies of responses are presented in Table 26. Of the 90 teachers responding, 82 (91.1%) used commercially prepared recordings, and 68 (75.6%) prepared their own materials. Of the 26 high attitude teachers, 22 (84.6%) prepared their own materials as compared with 22 (68.7%) of the mid attitude teachers, and 24 (75%) of the low attitude teachers.

The teachers' perception of the utility of the language laboratory in achieving program goals was sought in the question below:

Part IV, Question 10

How helpful is the lab in developing the following skills? Please use the following scale: *1* for not helpful
2 for moderately helpful
3 for very helpful

TABLE 26. Frequencies and Percentages of Responses: Sources of Language Laboratory Materials

Source	High n=26		Mid n=32		Low n=32		Total n=90	
	F	%	F	%	F	%	F	%
a	22	84.6	22	68.7	24	75.0	68	75.6
b	13	50.0	7	21.9	14	43.8	34	37.8
c	23	88.5	30	93.7	29	90.6	82	91.1
d	7	27.0	15	46.9	14	43.8	36	40.0
e	8	30.8	7	21.9	4	12.5	19	21.1
f	3	11.5	5	15.6	4	12.5	12	13.3
g	3	11.5	7	21.9	4	12.5	14	15.6
h	0	0.0	0	0.0	0	0.0	0	0.0

a) pronunciation and intonation

b) oral facility

c) aural facility (understanding the spoken language)

d) conversation

e) cultural understanding

f) reading ability

g) writing ability

h) others (please specify).

Table 27 presents the frequencies of responses to this question. For the first three language skills listed, the majority of the teachers felt the language laboratory was moderately or very helpful. The low, mid, and high attitude teachers felt this way about the skills of pronunciation and intonation, and aural facility. However, while 19 (73.1%) of the high attitude teachers indicated that the language laboratory was very helpful in developing oral facility, 12 (38.7%) of the mid attitude teachers and only 8 (24.2%) of the low attitude teachers felt this to be the case.

In developing the skill of conversation, 23 (69.7%) of the low attitude teachers indicated that the language laboratory was not helpful, while 13 (41.9%) of the mid attitude teachers, and 6 (23.1%) of the high attitude teachers agreed. None of the mid or low attitude teachers found the language laboratory to be very helpful in developing conversation, but 5 (19.2%) of the high attitude teachers did. While 23 (74.2%) of the low attitude teachers indicated that the language laboratory was not helpful in developing cultural understanding, only 11 (42.3%) of the high attitude teachers felt the same.

TABLE 27. Frequencies and Percentages of Responses: Helpfulness of the Language Laboratory in Developing Language Skills

Skill	High n = 26						Mid n = 31						Low n = 33 (a-d) n = 31 (e-h)						Total n = 90 n = 88					
	1		2		3		1		2		3		1		2		3		1		2		3	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
a	1	3.8	5	19.2	20	77.0	1	3.2	10	32.3	20	64.5	2	6.1	12	36.4	19	57.5	4	4.4	27	30.0	59	65.6
b	1	3.8	6	23.1	19	73.1	1	3.2	18	58.1	12	38.7	3	9.1	22	66.7	8	24.2	5	5.6	46	51.1	39	43.3
c	1	3.8	10	38.5	15	57.7	1	3.2	15	48.4	15	48.4	7	21.2	13	39.4	13	39.4	9	10.0	38	42.2	43	47.8
d	6	23.1	15	57.7	5	19.2	13	41.9	18	58.1	0	0.0	23	69.7	10	30.3	0	0.0	42	46.6	43	47.8	5	5.6
e	11	42.3	12	46.2	3	11.5	21	67.7	8	25.8	2	6.5	23	74.2	8	25.8	0	0.0	56	63.6	28	31.8	4	4.6
f	6	23.1	12	46.2	8	30.7	9	29.0	19	61.3	3	9.7	15	48.4	14	45.1	2	6.5	30	34.1	45	51.1	13	14.8
g	17	65.4	7	26.9	2	7.7	22	71.0	8	25.8	1	3.2	25	80.6	6	19.4	0	0.0	64	72.7	21	23.9	3	3.4
h	0	0.0	0	0.0	1	3.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	6.5	0	0.0	0	0.0	3	3.4

The language laboratory was considered moderately helpful in developing reading ability by 45 (51.1%) of all the teachers, but in developing writing ability by only 21 (23.9%) of the teachers. The majority of the teachers, that is, 64 (72.7%), felt the language laboratory was not helpful in developing writing ability.

A number of other skills for which the language laboratory was very helpful were added by a number of teachers. These were the memorization of materials, grammatical structures, and oral examinations.

To determine the problems encountered in language laboratory use by the teachers, the following question was asked:

Part IV, Question 11

Following are some of the problems you may have experienced (or are experiencing) in the use of the language lab. Rate them by using the following scale: *1* for no problem
2 for a moderately serious problem
3 for a very serious problem

a) I am not convinced of the effectiveness of the lab as a teaching aid.

b) I find it difficult to try new ideas, procedures, and techniques.

c) I find it difficult to maintain discipline while working at the console.

d) I find it difficult to maintain class interest in lab practice.

e) I find the lab difficult to operate.

f) I find the equipment is poorly maintained.

g) I find that there are not enough booths to accommodate all the students in some of the classes.

h) I find the lab schedule awkward.

i) I find the lab too far from the classroom resulting in much time loss for migration.

j) I find I do not have enough time to complete the objectives of the course.

k) I find the lab materials we have in our school inadequate.

l) I find I do not have time to prepare practice tapes myself.

m) I find it difficult to prepare aural-oral tests.

n) I find it difficult to integrate lab work with class work.

o) I lack the knowledge in effective lab technique.

p) others (please specify).

The responses are presented in Table 28. Not being convinced of the effectiveness of the language laboratory presented no problem for the majority of the high and mid attitude teachers. Only 21 (67.6%) of the low attitude teachers indicated no problem here. While only 2 (7.7%) of the high attitude teachers indicated that their difficulty in presenting new ideas, procedures, and techniques was a moderately serious problem, 8 (25%) of the mid attitude teachers, and 9 (29%) of the low attitude teachers found this to be a moderately serious problem, whereas 5 (16.2%) of the low attitude teachers found it to be a very serious problem.

Maintaining class discipline did not present a problem for the majority of the teachers. Maintaining class interest in language laboratory practice was a moderately serious problem for 37 (41.5%) of the teachers. The high attitude group did not find this to be a problem; however, 19 (59.4%) of the mid attitude group and 17 (54.8%) of the low group found it to be a moderately serious problem.

TABLE 28. Frequencies and Percentages of Responses: Problems Experienced in the Use of the Language Laboratory

Problem	High n = 26						Mid n = 32						Low n = 31						Total n = 89					
	1		2		3		1		2		3		1		2		3		1		2		3	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
a	23	88.5	2	7.7	1	3.8	27	84.4	4	12.5	1	3.1	21	67.7	8	25.8	2	6.5	71	79.8	14	15.7	4	4.5
b	24	92.3	2	7.7	0	0.0	24	75.0	8	25.0	0	0.0	17	54.8	9	29.0	5	16.2	65	73.0	19	21.4	4	5.6
c	20	76.9	6	23.1	0	0.0	31	96.9	1	3.1	0	0.0	28	90.3	3	9.7	0	0.0	79	88.8	10	11.2	0	0.0
d	25	96.2	1	3.8	0	0.0	12	37.5	19	59.4	1	3.1	8	25.3	17	54.8	6	19.4	45	50.6	37	41.5	7	7.9
e	24	96.2	1	3.8	0	0.0	30	93.7	2	6.3	0	0.0	25	80.6	5	16.2	1	3.2	80	89.9	8	9.0	1	1.1
f	19	73.1	5	19.2	2	7.7	25	78.1	5	15.6	2	6.3	13	41.9	11	35.5	7	22.6	57	64.0	21	23.6	11	12.4
g	22	84.7	3	11.5	1	3.8	29	90.6	2	6.3	1	3.1	26	83.8	2	6.5	3	9.7	77	86.5	7	7.9	5	5.6
h	23	88.5	3	11.5	0	0.0	29	90.6	3	9.4	0	0.0	27	87.0	2	6.5	2	6.5	79	88.8	8	9.0	2	2.2
i	22	84.7	3	11.5	1	3.8	27	84.4	3	9.4	2	6.2	26	83.8	4	12.9	1	3.2	75	84.3	10	11.2	4	4.5
j	16	61.5	7	27.0	3	11.5	19	59.4	7	21.9	6	18.7	9	29.0	16	51.6	6	19.4	44	49.4	30	33.7	15	16.9
k	21	80.8	4	15.4	1	3.8	20	62.5	10	31.3	2	6.2	17	54.8	8	25.8	6	19.4	58	65.1	22	24.7	9	10.2
l	9	34.6	9	34.6	8	30.8	6	18.7	12	37.5	14	43.8	4	13.0	13	41.9	14	45.1	19	21.4	34	38.2	36	40.4
m	17	65.4	9	34.6	0	0.0	13	40.6	15	46.9	4	12.5	9	29.0	15	48.4	7	22.6	39	43.3	39	43.8	11	12.4
n	26	100	0	0.0	0	0.0	25	78.1	7	21.9	0	0.0	26	83.8	5	16.2	0	0.0	77	86.5	12	13.5	0	0.0
o	22	84.7	3	11.5	1	3.8	21	65.6	11	34.4	0	0.0	17	54.8	10	32.3	4	12.9	60	67.4	24	27.0	5	5.6
p	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	9.7	0	0.0	0	0.0	3	3.4

The majority of the teachers found no difficulty with the operation of the language laboratory, with the lack of enough booths, with the schedule, or with the location of the language laboratory. Equipment maintenance did present a moderately serious problem for 11 (35.5%) of the low attitude teachers, and a very serious problem for 7 (22.6%) of them. Only 5 (19.2%) of the high attitude teachers and 5 (15.6%) of the mid attitude teachers considered equipment maintenance a moderately serious problem. It should be mentioned here that although the number of booths in the language laboratory did not present a problem for 77 (86.5%) of all the teachers, 7 (7.9%) found it to be a moderately serious problem, and 5 (5.6%) found it to be a very serious problem. It can be assumed that if a language laboratory has fewer booths than students in a particular class, that class may use the language laboratory only on days when a sufficient number of students is absent. The language laboratory's proximity to the language classroom may have a similar effect upon the frequency of language laboratory use. Although 75 (84.3%) of the teachers did not find this to be a problem, 10 (11.2%) found it to be a moderately serious problem, and 4 (4.5%) found it to be a very serious problem. If classes take too much time to get to the language laboratory, they may not get to use it as frequently as they would were it situated closer to the language classroom.

Not having enough time to complete the objectives of their courses was a moderately serious problem for 30 (33.7%) of the teachers, and a very serious problem for 15 (16.9%). One could be justified in assuming that when time is at a premium, use of the language laboratory may become less frequent.

The inadequacy of language laboratory materials was a moderately serious problem for 22 (24.7%) of the teachers, and a very serious problem for 9 (10.2%). Not having the time to prepare practice tapes themselves was a moderately serious problem for 34 (38.2%) of the teachers, and a very serious problem for 36 (40.4%). Preparation of aural-oral tests was a moderately serious problem for 39 (43.8%) of the teachers, and a very serious problem for 11 (12.4%).

Difficulty in integrating laboratory work with class work presented no problem to the majority of the teachers. The lack of knowledge in effective language laboratory techniques was not a problem for 22 (84.7%) of the high attitude teachers, while it was a moderately serious problem for 11 (34.4%) of the mid attitude teachers and 10 (32.3%) of the low attitude teachers.

Only three low attitude teachers indicated that they had other very serious problems. These involved the preparation of grammar drills, the mechanical and technical inadequacy of the equipment, and the premise that students would use the equipment adequately.

Reactions of a more general nature were sought in the following questions:

Part V, Questions 1, 2, and 3

The results for the following three questions are presented in Table 29.

1. Do you feel the language lab causes the quality of your language instruction to
   a) improve,
   b) deteriorate, or
   c) remain the same?

TABLE 29. Frequencies and Percentages of Responses: Effects of the Language Laboratory upon the Quality of Instruction, Work Load, and the Learning of French

	High n = 26						Mid n = 32						Low n = 33						Total n = 91					
Choice	a		b		c		a		b		c		a		b		c		a		b		c	
Question	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
1	26	100.0	0	0.0	0	0.0	31	96.4	0	0.0	1	3.6	25	75.8	0	0.0	8	24.2	82	90.1	0	0.0	9	9.9
2	10	38.5	6	23.0	10	38.5	12	37.5	4	12.5	16	50.0	16	48.5	4	12.1	13	39.4	38	41.8	14	15.4	39	42.8
3	26	100	0	0.0	0	0.0	32	100	0	0.0	0	0.0	28	84.8	0	0.0	5	15.2	86	93.4	0	0.0	5	6.6

The quality of their language instruction was improved for 82 (90.1%) of all the teachers. While 8 (24.2%) of the low attitude teachers indicated that the quality of their instruction remained the same, only 1 (3.6%) of the mid attitude teachers and none of the high attitude teachers felt this way. No teachers felt that the language laboratory caused the quality of their language instruction to deteriorate.

2. Do you feel the language lab causes your work load to
   a) increase,
   b) decrease, or
   c) remain the same?

The language laboratory increased the work load for 38 (41.8%) of all the teachers, decreased it for 14 (15.4%), and did not change it for 39 (42.8%) of them. That more teachers did not find their work load increased is very interesting as earlier 75.6% of the teachers had indicated that they prepared their own practice tapes, and that they experienced difficulty in doing this work.

3. Do you feel the language lab
   a) helps,
   b) hinders, or
   c) does not affect the learning of French for students?

Eighty-six (93.4%) of all the teachers felt the language laboratory helped the students to learn French. The 5 (6.6%) of the teachers who indicated that the language laboratory did not affect the learning of French for students were all low attitude teachers. No teachers felt the language laboratory to be a hindrance to the students in their learning of French.

Part V, Question 4

Does your school employ a language lab aide?

a) yes (full-time)

b) yes (part-time)

c) no.

The results for this question are presented in Table 30. Of the 91 teachers in this study, 51 (56%) had no language laboratory aide, 30 (33%) had a part-time aide, and 10 (11%) had a full-time aide. These language laboratory aides were employed in 10 schools, all of which were part of one large urban school district. Only two of these schools employed full-time aides.

Part V, Questions 5 and 6

The results for the following two questions are presented in Table 31.

5. Do you feel the continued use of the lab is justified?

a) yes

b) no.

Eighty-eight (96.7%) of all the teachers indicated yes. Not unexpectedly, the three teachers who felt that the continued use of the language laboratory was not justified were all low attitude teachers.

6. Do you feel pre-service and in-service education especially devoted to language lab methods and techniques is vital for second language teachers?

a) yes

b) no.

Eighty-two (90.1%) of all the teachers indicated yes. In answering this question, a number of teachers indicated that "vital" was perhaps

TABLE 30. Frequencies and Percentages of Responses: Proportion of Teachers Having Full-time Aides, Part-time Aides, and No Aides

Aides	High n=26		Mid n=32		Low n=33		Total n=91	
	F	%	F	%	F	%	F	%
Full-time	2	7.7	6	18.8	2	6.1	10	11.0
Part-time	7	26.9	10	31.2	13	39.4	30	33.0
None	17	65.4	16	50.0	18	54.5	51	56.0

TABLE 31. Frequencies and Percentages of Responses: Continued Use of the Language Laboratory and the Need for Pre-service and In-service

Questions \ Choice	High n=26				Mid n=32				Low n=33				Total n=91			
	a		b		a		b		a		b		a		b	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
5	26	100.0	0	0.0	32	100.0	0	0.0	30	90.9	3	9.1	88	96.7	3	3.3
6	23	88.5	3	11.5	29	90.6	3	9.4	30	90.9	3	9.1	82	90.1	9	9.9

too strong a word, and that words such as "needed" or "important" could be substituted.

Summary of Teachers' Recommendations and Comments

Recommendations for In-service

The teachers in this study recommended a variety of topics for discussion at in-service sessions, workshops, and institutes on language laboratory use. These topics dealt with four areas of concern.

The most frequently recommended topic for discussion was testing in the language laboratory. Teachers wanted to learn how to prepare laboratory tests and which testing techniques were most effective in the language laboratory.

The preparation of tapes which could add variety to language laboratory programs was the second most frequently recommended topic. A number of teachers indicated that they would like to learn to coordinate efforts aimed at preparing language laboratory materials. A number of teachers were interested in learning to develop materials which would help to stimulate the students' conversational ability, and to enhance the students' cultural development. Several teachers went on further to suggest that a clearing house for ideas and prepared materials for the language laboratory be established at some central location, enabling teachers to make use of these ideas and materials, and to even help set up a language laboratory materials library in their own schools.

The technical operation and basic maintenance of the language laboratory was another topic of interest. Teachers wanted to have discussed the detailed instructions about all the possible functions of the language laboratory, recording techniques, monitoring, and identifying mechanical problems. One teacher even suggested that all second language teachers be given quick refresher courses in language laboratory maintenance at the beginning of every school year.

The topic of individualized instruction was of interest to a good number of teachers. Here teachers wanted to see discussed the scheduling and supervision of the language laboratory for maximum efficiency for student use both during and outside of class time.

Additional Comments and Suggestions

Many of the teachers took time to make a variety of comments and suggestions regarding the use of the language laboratory. One teacher in particular provided a very comprehensive list of suggestions. They are quoted here:

> We must [as a system]:
>
> 1) hire qualified lab aides for routine maintenance;
> 2) have regular maintenance from downtown service personnel;
> 3) buy only student-proof equipment;
> 4) consult teachers in a school regarding layout of the lab;
> 5) provide sufficient ancillary space (storage, recording room, office);
> 6) release 1 teacher/period for lab supervision and preparation of materials, and
> 7) locate all language classrooms in close proximity to lab (no stairs).

The need for assistance with the routine maintenance, scheduling, and supervision of the language laboratory, as well as preparation of

materials for language laboratory use, was frequently expressed. A number are quoted:

> ". . . our school Board does not realize the *time* necessary to develop a functioning, efficient lab. Teachers require at least one 40 minute period together to make tapes, coordinate programs, mark tapes, make oral comprehension and production tests, dictees, etc. Or a central department could make tapes for us. At any rate at least one teacher in the school should have time to coordinate the lab and look after maintenance (with lab assistants or student aides)."

> "Having worked without a full-time assistant and with one, I feel this is one of the most important factors. For the first time we as teachers have been freed from the routine maintenance and technical tasks and can give our full attention to helping the students. Our assistant sets up the programs, tapes library tapes for us and does so many "little" things that it is marvellous! No comparison to the other years."

A number of teachers indicated that their equipment was good in scope but mechanically poor. Because of this, a number of booths were frequently out of order. An example of a mechanical problem is presented:

> "Failure to erase, resulting in reserve programs being superimposed is a constant curse. About 1/3 of the student booths are usually inactive because of this."

It was suggested that students must understand the functions of the language laboratory and that their time there is not a play period.

> "It seems almost imperative to instruct students (during the first month of school) in the efficient use of the equipment and simple maintenance chores. They must be made to feel important (privileged), responsible."

> "The lab seems most satisfactorily insured if the students have the mechanics and use of it demonstrated."

Teachers did not seem to be particularly concerned about the layout of the language laboratory or the lack of ancillary space. A number did

complain about the location of the language laboratory, and that at times it was used by teachers of other subjects such as English or Shorthand. It was suggested that language laboratories would be more useful if teachers had been consulted about the equipment beforehand.

> "In our lab there are expensive facilities that are never used and some things (such as a master switch to stop all machines) that do not exist that would be useful for testing purposes."

Interestingly enough, a number of teachers felt that it is the student himself who makes the language laboratory class a success.

> "Ultimately it is the student who decides just how useful the lab will be to him or her."

> "Motivation on the part of the student is the prime factor for correct use of the lab."

> "With groups of kids with negative or indifferent attitudes, it [the language laboratory] is a waste of time."

> "In my opinion, lab work requires great patience, concentration, and motivation (on the part of the student)."

Chapter V

SUMMARY, IMPLICATIONS AND RECOMMENDATIONS, AND FURTHER RESEARCH

Summary

Procedure

The study was undertaken in order to determine if there exists any relationship between the following variables:

1) teacher attitude toward the language laboratory and their professional preparation in its use,
2) teacher attitude toward the language laboratory and the manner in which they use it, and
3) professional preparation of teachers in language laboratory use and the manner in which they use it.

In addition to these, the study sought to determine the nature of future pre-service and in-service programs in language laboratory techniques.

All teachers involved in the instruction of French courses during the 1971-72 school year in 17 selected school districts or divisions having schools with audio-active-compare language laboratory installations were selected for participation in the study. In the 37 schools having these installations, 109 teachers were involved in French instruction. From these 109 teachers, 91 completed questionnaires were obtained.

The questionnaire dealt with five areas of concern: a) actual teaching situation; b) professional preparation and classroom and language laboratory experience; c) teacher attitude toward the language

laboratory; d) actual laboratory use along with other instructional data relating to its use, and e) teachers' recommendations for in-service programs in language laboratory techniques.

Teachers were asked to respond to the questionnaire on the basis of the work done during the 1971-72 school year. Statistical treatment was carried out on the 21-point semantic differential scale which measured their attitudes toward the language laboratory, and on key questions related to their professional preparation in its use.

Based on the range and frequency distribution of their total scores on the semantic differential scale, the teachers were divided into high, mid, and low attitude groups. To obtain the factor scores, the intercorrelations among the 21 scales were subjected to a principal components analysis followed by a varimax rotation.

To obtain information regarding the three attitude groups, general mean scores and variances were calculated for the total scores on the semantic differential. To uncover differences in the means for the three groups, a one-way analysis of variance was carried out. Scheffés multiple comparison of means was carried out to disclose which pairs of group means were significantly different.

In order to determine the specific characteristics of the polarized attitude groups, the mid group was eliminated from further statistical analyses to be used again in the discussion of the descriptive data on the questionnaire. Seven hypotheses were postulated, all of which dealt with the comparison of the high and low attitude teacher groups on variables related to teacher preparation in language laboratory use. Hypothesis 1.1 dealt with the number of years of training beyond high

school; Hypothesis 1.2 with the number of years of teaching experience; Hypothesis 1.3 with the number of years of teacher access to the language laboratory; Hypothesis 1.4 with the number of French language and/or literature courses completed at the university level; Hypothesis 1.5 with the number of curriculum and instruction courses completed in second language teaching; Hypothesis 1.6 with the type of training completed in language laboratory methods and materials, and Hypothesis 1.7 with the type of training completed in audio-visual methods and materials.

The Chi-square test was used to test the significance of the comparisons of the two attitude groups on Hypotheses 1.1, 1.2, 1.3, 1.4, and 1.5. The Fisher z test was used to test the significance of the differences between proportions for Hypotheses 1.6 and 1.7.

For the descriptive data on the questionnaire, the frequencies and percentages of responses were tabulated and analyzed, whenever possible, on the basis of the courses taught, the three attitude groups, and the total group.

Results

As a result of the principal components analysis on the semantic differential scale, three primary factors emerged accounting for 50% of trace. Factor I appeared to reveal the evaluative dimension, Factor II the potency dimension, and Factor III the activity dimension, with the evaluative dimension accounting for over one-half of the common variance. This is not surprising as asking the teachers to indicate their attitudes toward the language laboratory was essentially asking them to evaluate it on the basis of their perceptions as to its usefulness in

second language instruction.

The one-way analysis of variance for the high, mid, and low attitude teacher groups revealed a statistically significant difference between the groups on their attitude toward the language laboratory. The results of Scheffé's multiple comparison of means revealed that all three pairs of group means were significantly different. This analysis indicated that the three groups of teachers in fact viewed the language laboratory differently. A limitation here was a lack of homogeneity of the variances of the three attitude groups preventing further comparison by analysis of variance. As a result the mid attitude group was dropped from further parametric analyses. In order that further comparisons between the two remaining teacher groups be continued, the Chi-square test and the Fisher z test had to be used.

Attitude versus professional preparation. The comparison of the high and low attitude teacher groups on the number of years of training, the number of years of experience teaching French, the number of teacher years of access to the language laboratory, the number of French language and/or literature courses completed, and the number of curriculum and instruction courses completed in second language teaching revealed no significant differences. *It can be concluded that teacher attitude toward the language laboratory as measured by the semantic differential and their professional preparation and experience are not related.*

The comparison of the high and low attitude teacher groups on the type of training they had completed in language laboratory methods and materials revealed no significant differences in favor of either group.

As no significant differences were found between attitude and the number of curriculum and instruction courses completed in second language teaching where some training in laboratory techniques is usually given, these results are not surprising. However, the comparison of the high and low attitude teacher groups on the type of audio-visual training they had completed revealed a significant difference for the low attitude group. The higher proportion of the low attitude group having completed in-service training in audio-visual methods and materials revealed a significant difference ($z = 1.99$; $p < 0.05$). One could speculate that having been exposed to the merits of a variety of instructional media and how they could enhance instructional methods may have had a negative effect upon the teachers' orientation toward the language laboratory which was considered narrower in scope than other media.

Attitude and language laboratory use. In order to describe the sample of the teachers in this study as fully as possible, the mid attitude teacher group was included in the discussion of the descriptive data on the questionnaire. Regarding language laboratory use, teachers tended to respond to the various items in a similar manner, regardless of their attitudes toward the language laboratory, or the actual French course or courses they taught.

Presented here is a summary of their responses:

1. The objectives of teaching French as perceived by the teachers were comprehension of the spoken language, oral proficiency in the language, reading ability, and writing ability.

2. With the exception of one teacher, all the teachers used the language laboratory, nine out of ten of whom used it on a regular basis.

Teachers tended to use it once or twice per week, using from 20 to 60% of the total class period to do so.

3. Teachers used the language laboratory most frequently as a practice lab, as an integral part of the classroom (lab work is integrated with the course), and for oral testing.

4. The techniques of teaching used most frequently in the language laboratory were pronunciation and intonation drill, aural drill for the comprehension of the spoken language, aural-oral tests and examinations, and to a lesser degree for aural-oral tests in reading comprehension.

It can be concluded that teacher attitude toward the language laboratory as measured by the semantic differential scale and the manner in which teachers use the laboratory are not related. Perhaps it is that the structure of the courses themselves plays a role in how the language laboratory is used. With the exception of the A-LM course which emphasizes individual progress, French courses tend to be highly structured. The material introduced in the classroom each day needs to be drilled or practised. The place where this can be done most efficiently is the language laboratory. The teacher cannot give sufficient practice time to each student in the second language class as time does not allow it. Oral testing in the language classroom is impossible as each individual must be tested a number of times during each course in order that the teacher can determine how well his students can perform in the oral aspects of the language. The language laboratory allows the teacher the opportunity to test a whole class in a class period, and then check the individual tapes at a later time.

Professional preparation and language laboratory use. On the basis of the acceptance of all the null hypotheses but 1.7 where a significant

difference was found to exist for the low attitude teacher group on the in-service training they had completed in audio-visual methods and materials, and the similar manner of language laboratory use indicated by the teachers despite differences in their general attitudes toward the language laboratory, *it can be concluded that professional preparation in language laboratory methods and materials and the manner in which teachers use the laboratory are not related.* The specific content of the language laboratory component of training was not checked. It may be that variation in such content accounts for this lack of effect.

The questionnaire is a self-report. It is very dependent upon how teachers interpret the items. There likely were differences of usage influenced by the professional preparation of teachers; however, the questionnaire in this study was not able to obtain these differences as the categories relating to laboratory usage were broad. An observational study and/or in-depth interviews of teachers in order to determine different patterns of laboratory use might more clearly show a relationship between professional preparation and actual manner of language laboratory use.

Additional instructionally related data. In trying to improve their knowledge of the French language and/or methodology, over one-half of the teachers indicated that in the last five years they had taken summer and/or evening courses, and regularly read journals, research reports, etc. Two-thirds of the teachers had attended institutes and/or workshops.

Commercially prepared materials were used by nearly all the teachers. However, three-fourths of the teachers did prepare their own materials. This is very interesting as the majority of the teachers had indicated

that they spent less than 20% of their preparation time for French on language laboratory materials. It may be that "preparation time for French" was interpreted differently by individual teachers. Some may have thought of it as the time they use for preparation for French both during and outside of school time.

The skills that the majority of the teachers felt the language laboratory was most helpful in developing were pronunciation and intonation, oral facility, and aural facility (understanding the spoken language).

The problems most frequently experienced in the language laboratory were the lack of time to prepare practice tapes, the preparation of aural-oral tests, the lack of time to complete course objectives, and maintaining class interest in laboratory practice. It should be mentioned that the low attitude teachers in particular found that they lacked the time to complete the course objectives. As well, maintaining class interest was a problem for over one-half of the mid and low attitude teachers, while it was not a problem for any but one of the high attitude teachers.

Equipment maintenance presented a problem for one-third of the teachers. Although the majority of the teachers had indicated that the language laboratory was inoperable less than 10% of the time, they very likely experienced a variety of problems which could be attributed to poor maintenance.

Nearly one-half of the low attitude teachers indicated that it was difficult for them to try new ideas, procedures, and techniques, and that they lacked the knowledge in effective laboratory techniques. One could venture to say that because these teachers have a negative orientation

toward the language laboratory, they cannot experience success during laboratory sessions. As this lack of success in the laboratory is often apparent, they probably feel discouraged and ineffectual.

Only eight of the 37 schools in this study employed language laboratory aides. Of these eight schools, only two had full-time aides. However, these aides assisted four out of ten teachers in the study.

The majority of the teachers felt that the language laboratory caused language instructions to improve, and that it helped the students to learn French. Virtually all the teachers indicated that the continued sue of the language laboratory was justified. Interestingly enough, teachers were divided on the question of work load, with four out of ten teachers indicating that it was increased by the laboratory, and four out of ten indicating that it remained the same.

Pre-service and in-service education especially devoted to language laboratory methods and techniques was considered vital by the majority of the teachers. As in-service topics, the teachers wanted to see the following topics discussed: testing, the preparation of laboratory materials, the technical operation and basic maintenance of the equipment, and individualized instruction in the language laboratory.

Implications and Recommendations

Second language educators have repeatedly indicated that attitude plays an important role in the effective implementation of the language laboratory. Studies carried out by Hocking (1968), Lorge (1964), and Smith *et al.* (1969) indicated that students' attitudes toward the language laboratory were a reflection not only of their teachers'

attitudes toward it, but also of the techniques of teaching employed in it, and the ease with which the equipment was handled by the teachers.

Smith *et al.* (1970) assessed teachers' attitudes toward language laboratory equipment and materials. As with the study carried out by Smith *et al.*, the findings of which revealed that the teachers' attitudes were not related to their use of the equipment, the present study also failed to reveal significant relationships between teacher attitude and language laboratory usage. Regardless of their attitudes toward it or their professional preparation in its use, teachers tended to use it primarily for practising the material presented in class and for testing. The use of the semantic differential technique to characterize the teachers into groups as to their attitudes toward the language laboratory was not particularly successful in sorting out patterns of laboratory usage.

As the data gathering for the present study was carried out in the spring of 1972, certain factors must be considered. The teachers involved in language laboratory instruction had been trained in the audio-lingual approach in second language teaching. This approach views the function of the language laboratory as that of strengthening the habits first formed in the class. Therefore, work in the laboratory revolves around pattern practice and structural drills. This approach was in fact being used by the teachers. Teaching training has subsequently moved to a more eclectic approach.

The length of time that the audio-active-compare language laboratory installation had been in use in Alberta high schools prior to the data gathering of the present study may be of importance. In 1972,

this type of installation would have been in the high schools an average of three years. The teacher involved in language laboratory instruction had perhaps not as yet had the opportunity or the confidence to exploit all the potential functions of this type of language laboratory. This may be especially the case in the higher level courses where the mechanical aspects of laboratory work could give way to approaches which foster communication-type skills. Whether these communication-related approaches can be effectively implemented in the laboratory, or whether they are in fact being implemented, is a subject for further follow-up research.

The results of this study have the following implications for educators of future second language teachers and for administrators. In spite of the controversy regarding the contribution of the language laboratory toward second language instruction, all but one of the teachers in this study did use the language laboratory, the majority of them on a regular basis. This seems to indicate that the language laboratory has become an integral part of the second language program in their schools. It, like many teaching aids which provide interest and variety to the learning process, is accepted and used by teachers who expect it to be helpful.

No matter what attitudes they held toward the language laboratory, the majority of the teachers indicated that pre-service and in-service training in laboratory methods and materials was necessary. Future second language teachers must be made familiar with the language laboratory and shown the effective use of it. The responsibility for doing this lies with their educators and the curriculum and instruction

courses in second language teaching. These courses must devote a sufficient amount of time to instruction in effective language laboratory techniques. They must prepare teachers to work with the language laboratory as a purposeful instrument of learning. Indeed, future teachers should spend a portion of their practicum time teaching in the language laboratory.

Cooperative arrangements could be made between universities and schools to provide in-service assistance in language laboratory techniques to teachers. Schools could be provided with information regarding materials available, recent research findings, and new approaches to language laboratory instruction. This is especially the case because of the emphasis placed upon individualized instruction in current second language courses. The language laboratory is essential to this approach as the equipment is designed for private and independent practice. Students must be trained by the teachers in the operation of the laboratory in order that they can proceed with their individual progress. Teachers who have received training in the instruction of language laboratory classes must be given in-service training in the use of the language laboratory for individualized instruction.

In view of the fact that many language laboratories in Alberta have been in operation for well over a decade, they are now being updated and in some cases replaced by more technologically advanced laboratory installations. Teachers must be given the opportunity to share in some of the decision-making regarding the selection of the equipment. It must be selected with a great deal of foresight in order

that it will meet the needs of the teachers, the students, and the school itself. Consultation with teachers who have had experience in language laboratory use may prevent the unnecessary costs incurred when equipment with functions which are rarely or never used is purchased. The location of the language laboratory in the school, the physical layout of the laboratory classroom, the type of storage space required for laboratory materials are all matters on which teachers could be consulted. Teacher participation in these types of decisions may result in a more positive attitude toward the language laboratory on the part of all the teachers who use it.

For Further Research

As a result of the findings of the present study, the following related topics may be appropriate as the focus of further investigation:

1. Since the present study was conducted based on commercial programs which are now being replaced, it might be replicated using the current curriculum in French.

2. Since the present study was conducted with only teachers of French in high schools with audio-active-compare language laboratory installations, it might be replicated under other conditions — with teachers of German, Ukrainian, or Spanish, with different grade levels, and in schools with other types of laboratory installations.

3. A similar study using Likert-type attitude measures might be conducted. The attitudes of the teachers could be related to observed uses of the language laboratory.

4. A longitudinal development study, i.e., one spanning the first three years of a teacher's career, might be conducted to determine how

attitude patterns emerge, how they are related to language laboratory usage, and student response.

5. A study of how teacher attitude is related to student attitude as it relates to grade levels on a maturational framework might be conducted.

6. A study, perhaps by means of classroom observational schedules, of the actual instructional techniques employed by second language teachers may reveal the criteria from which discussion of factors related to language laboratory use can originate.

7. A study using an attitude questionnaire more sensitive to potential differences in language laboratory usage could be carried out.

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APPENDIX A

FACULTY OF EDUCATION
DEPARTMENT OF SECONDARY EDUCATION

THE UNIVERSITY OF ALBERTA
EDMONTON 7, CANADA

Dear Sir or Madam:

Under my direction, Mrs. Bozena Shanahan is carrying out a study of teacher variables as they relate to the use of the audio-active-compare language laboratories in Alberta. I should be most grateful to you and your staff for any assistance which you might be able to offer her in the completion of her research.

Yours sincerely,

Douglas V. Parker

Douglas V. Parker,
Associate Professor.

DVP:ls

Enclosed is a copy of the questionnaire which is to be sent to the teachers of French in high schools which have audio-active-compare language laboratory installations (sometimes referred to as record-playback labs). This questionnaire may not be in its final form as some minor changes may have to be made, depending on the feedback received from various jurisdictions.

Does your school have an audio-active-compare language laboratory?

____yes ____no

If your answer is yes, are you willing to have the teacher or teachers under your jurisdiction participate in this study?

____yes ____no

If you are willing to participate in this study, please indicate the number of teachers teaching French in your school. _____

Please return this sheet in the envelope provided. Thank you for your cooperation.

NOTE: The name of the school is required on the questionnaire in order to keep count of the number of responses received. Names of individuals participating in this study will not be required. Questionnaires will be sent to the schools in care of the principals, who will distribute them to the participants. The individual teachers participating in the study will mail the questionnaires in addressed, stamped envelopes which will be provided by the researcher.

APPENDIX B

15110 - 76 A Avenue
Edmonton, Alberta
April 28, 1972

As a graduate student in Secondary Education (Second Languages) at the University of Alberta, I am carrying out a study of teacher variables as they relate to the use of the audio-active-compare language laboratories in Alberta high schools. Permission to complete the research for this study in your school has been granted by your superintendent.

Enclosed, you will find the questionnaires to be completed by the teachers of French. Please distribute these questionnaires to all the teachers of French in your school. Thank you very much for your assistance.

Yours sincerely,

Bozena M. Shanahan

TEACHER QUESTIONNAIRE

Your assistance is greatly appreciated in aiding with the following study of teacher variables as they relate to the use of the audio-active-compare language laboratory in Alberta high schools.

The purposes of this study are fourfold:

1) to determine if there is any relationship between the attitudes of teachers toward the language laboratory and the manner in which they use it,

2) to determine if there is any relationship between the professional preparation of the teachers in the use of the language laboratory and the manner in which they use it,

3) to determine if there is any relationship between the attitudes of teachers toward the language laboratory and their professional preparation in its use, and

4) to determine the nature of future pre-service and in-service programs in language laboratory techniques.

Copies of this questionnaire are being sent to approximately 130 teachers of French in both rural and urban Alberta high schools which have audio-active-compare language laboratory installations. Each teacher is asked to complete one questionnaire on the basis of the work which has been and is being done in the current school year (1971-72). Neither the individuals participating in the study nor the schools in which they teach will be associated with any of the findings of this study. All responses will be regarded as confidential.

Please respond as fully as you can. The questionnaire should take approximately 15-20 minutes to complete. Thank you once more for your assistance.

NOTE: The name of the school is requested in order to keep count of the number of responses received.

I. Please complete the following questions:

1. School _____

2. Number of periods per day offered at this school _____

3. Number of periods you teach French _____

4. Number of minutes of preparation time you have per day _____

5. Please indicate by name and grade level all the French courses you teach (VIF, Ecouter et Parler, Chez les Français, etc.) Note: In the case of semester schools, include the French courses you taught during the first semester. _____

_____

_____

6. If you teach other courses (subjects) in addition to French, list them by name and grade. _____

_____

7. If you have answered question 6, indicate how much of your preparation time you devote to the subjects other than French by placing a check in the appropriate blank.

_____ less than 20%
_____ 20-40%
_____ 40-60%
_____ more than 60%

II. Place a check in the appropriate blank:

1. How many years of training have you completed beyond high school - as per salary schedule?

_____ 2 years
_____ 3 years
_____ 4 years
_____ 5 years or more

2. How many years of experience teaching French did you have at the beginning of this school year?

_____ 1 year
_____ 2-4 years
_____ 5-8 years
_____ 9 years or more

3. How many years have you had access to a language laboratory — as a teacher?

_____ 1 year or less
_____ 2-3 years
_____ 4-5 years
_____ 6 years or more

4. How many French literature and/or language courses have you completed at the university level?

_____ none
_____ 1
_____ 2
_____ 3 or more

5. How many courses in curriculum and instruction in second language teaching have you completed? (for the purposes of this study, a half course will be counted as one)

_____ none
_____ 1
_____ 2
_____ 3 or more

6. What training in language laboratory methods and materials have you have? (check as many as apply)

_____ pre-service training (university)
_____ in-service training
_____ other (specify) _____
_____ none

7. What training in audio-visual methods and materials have you had? (check as many as apply)

_____ pre-service training
_____ in-service training
_____ other (specify) _____
_____ none

8. In which of the following activities related to improving your knowledge of the French language and/or methodology have you participated in the past five years? (check as many as apply)

_____ summer school and/or evening courses
_____ institutes and/or workshops
_____ travel or study in a French-speaking area
_____ regular reading of professional journals, research reports, etc.
_____ others (specify) _____

III. The purpose of this part of the questionnaire is to determine attitudes toward the language laboratory concept. You are asked to rate this concept on a series of descriptive scales. Please make your judgements on the basis of what this concept means to you. Make your ratings on each of the scales in order.

Here is how you use the scales:

If you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your check-mark as follows:

clear ✓ : ___ : ___ : ___ : ___ : ___ : ___ hazy

or

clear ___ : ___ : ___ : ___ : ___ : ___ : ✓ hazy

If you feel that the concept is quite closely related to one or the other end of the scales (but not extremely), you should place your check-mark as follows:

strong ___ : ✓ : ___ : ___ : ___ : ___ : ___ weak

or

strong ___ : ___ : ___ : ___ : ___ : ✓ : ___ weak

If you feel that the concept is only slightly related to one side as opposed to the other side (but is not really neutral), then you should place your check-mark as follows:

active ___ : ___ : ✓ : ___ : ___ : ___ : ___ passive

or

active ___ : ___ : ___ : ___ : ✓ : ___ : ___ passive

If you consider the concept to be neutral on the scales, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, you should place your check-mark in the middle space:

safe ___ : ___ : ___ : ✓ : ___ : ___ : ___ threatening

IMPORTANT:
1. Place your check-marks in the middle of spaces.
2. Be sure you check every scale for each concept — DO NOT OMIT ANY.
3. Never put more than one check-mark on a single scale.

Sometimes you will feel as though you've had the same item before on the scale. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier. MAKE EACH ITEM A SEPARATE AND INDEPENDENT JUDGEMENT. Work quickly. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items that are wanted.

What are your attitudes toward the language laboratory concept?

bad ___:___:___:___:___:___:___ good

passive ___:___:___:___:___:___:___ active

boring ___:___:___:___:___:___:___ interesting

relaxed ___:___:___:___:___:___:___ tense

complex ___:___:___:___:___:___:___ simple

powerful ___:___:___:___:___:___:___ weak

helpful ___:___:___:___:___:___:___ unhelpful

rewarding ___:___:___:___:___:___:___ punishing

pleasing ___:___:___:___:___:___:___ annoying

untimely ___:___:___:___:___:___:___ timely

awkward ___:___:___:___:___:___:___ graceful

safe ___:___:___:___:___:___:___ threatening

personal ___:___:___:___:___:___:___ impersonal

resting ___:___:___:___:___:___:___ busy

clear ___:___:___:___:___:___:___ hazy

lenient ___:___:___:___:___:___:___ severe

meaningless ___:___:___:___:___:___:___ meaningful

superficial ___:___:___:___:___:___:___ profound

worthless ___:___:___:___:___:___:___ valuable

gentle ___:___:___:___:___:___:___ violent

definite ___:___:___:___:___:___:___ uncertain

IV. Place a check in the appropriate blanks. Check as many as apply.

VIF — Voix et Images de France

A-LS - Audio-Lingual Series or Holt, Rinehart Series comprising E&P — Ecouter et Parler

Ch.Fr. - Chez les Français

A-LM - Audio-Lingual Materials

Note: If you teach Parler et Lire, note it in the Ch.Fr. column.

1. How do you use the language laboratory?	VIF	A-LS E&P	A-LS Ch.Fr.	A-LM
as a regular classroom	___	___	___	___
as a practice lab	___	___	___	___
for oral testing	___	___	___	___
for students who are preparing or recording oral compositions	___	___	___	___
for students who are pursuing individual projects	___	___	___	___
as an integral part of the classroom (lab work is integrated with the course	___	___	___	___
as a listening room only	___	___	___	___
others (please specify)	___	___	___	___

_____

2. What techniques of teaching to you use in the language lab?				
pronunciation and intonation drill	___	___	___	___
aural drill for the comprehension of the spoken language	___	___	___	___
aural drill (repetition of phrases)	___	___	___	___
memorizing material for conversation	___	___	___	___
dictation	___	___	___	___
showing of films	___	___	___	___

	VIF	A-LS E&P	A-LS Ch.Fr.	A-LM
showing of visual materials	___	___	___	___
use of reading for cultural purposes	___	___	___	___
aural-oral tests and examinations	___	___	___	___
aural-oral tests for reading comprehension	___	___	___	___
others (please specify)	___	___	___	___

_____

3. What are your objectives in teaching French?

oral proficiency in the language	___	___	___	___
reading ability	___	___	___	___
writing ability	___	___	___	___
comprehension of the spoken language	___	___	___	___
preparation for the study of literature	___	___	___	___
others (please specify)	___	___	___	___

_____

4. How many periods per week do your classes usually use the lab?

one period	___	___	___	___
two periods	___	___	___	___
three periods	___	___	___	___
four periods	___	___	___	___
five periods	___	___	___	___

other arrangements (please specify) _____

_____

5. How many minutes of actual lab work is done in each period listed in answer 4?

	VIF	A-LS E&P	A-LS Ch.Fr.	A-LM
10 minutes or less	___	___	___	___
10-20 minutes	___	___	___	___
20-30 minutes	___	___	___	___
30 minutes or more	___	___	___	___

NOTE: How long are the class periods in your school? _____

6. In general, what proportion of the time your classes spend in the language lab is used for student recording?

_____ less than 20%
_____ 20-40%
_____ 40-60%
_____ more than 60%

7. In general, what proportion of time is your language lab inoperable (due to mechanical problems)?

_____ less than 10%
_____ 10-20%
_____ 20-30%
_____ more than 30%

8. What proportion of your preparation time for French do you devote to materials for use in the lab?

_____ less than 20%
_____ 20-40%
_____ 40-60%
_____ more than 60%

9. Where do you get the materials you use in the lab? (check as many as apply)

_____ prepared by me
_____ prepared by me in cooperation with my colleagues
_____ commercially prepared recordings
_____ recordings prepared by my school district
_____ recordings made available by the Department of Education
_____ recordings borrowed or rented from other schools
_____ others (please specify) _____

_____

10. How helpful is the lab in developing the following skills? Please use the following scale: 1 for not helpful
2 for moderately helpful
3 for very helpful

_____ pronunciation and intonation
_____ oral facility
_____ aural facility (understanding the spoken language)
_____ conversation
_____ cultural understanding
_____ reading ability
_____ writing ability
_____ others (please specify) _____

11. Following are some of the problems you may have experienced (or are experiencing) in the use of the language lab. Rate them by using the following scale: 1 for no problem
2 for a moderately serious problem
3 for a very serious problem

_____ I am not convinced of the effectiveness of the lab as a teaching aid.
_____ I find it difficult to try new ideas, procedures and techniques.
_____ I find it difficult to maintain class discipline while working at the console.
_____ I find it difficult to maintain class interest in lab practice.
_____ I find the lab difficult to operate.
_____ I find the equipment is poorly maintained.
_____ I find that there are not enough booths to accommodate all the students in some of the classes.
_____ I find the lab schedule awkward.
_____ I find the lab too far from the classroom resulting in much time loss for migration.
_____ I find I do not have enough time to complete the objectives of the course.
_____ I find the lab materials we have in our school inadequate.
_____ I find it difficult to prepare aural-oral tests.
_____ I find it difficult to integrate lab work with class work.
_____ I lack the knowledge in effective lab techniques.
_____ others (please specify) _____

_____

V. Place a check in the appropriate blank:

1. Do you feel the language lab causes the quality of your language instruction to

_____ improve
_____ deteriorate
_____ remain the same

2. Do you feel the language lab causes your work load to

_____ increase
_____ decrease
_____ remain about the same

3. Do you feel the language lab

_____ helps
_____ hinders
_____ does not affect the learning of French for the students.

4. Does your school employ a language lab aide?

_____ yes (full-time _____ yes (part-time)
_____ no

5. Do you feel the continued use of the language lab is justified?

_____ yes
_____ no

6. Do you feel pre-service and in-service education especially devoted to language lab methods and techniques is vital for second language teachers?

_____ yes
_____ no

7. If you were to attend in-service sessions, workshops, or institutes on the use of the language lab, what specific topics would you like discussed?

_____

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8. Use this space for any additional comments or suggestions regarding the use of the language lab.

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